

# Appendixes

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# Appendix A

## Relevant Statutes, Regulations, Policies, and Agreements

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This Appendix contains a listing of relevant statutes, regulations, policies and agreements applicable to the Forest Service. This section has been updated from the Proposed Revised Forest Plan to include brief summaries of the statutes, regulations and Executive Orders. Web site locations where the text of the documents can be obtained are also provided where available.

### Forest Service Directives

<http://www.fs.fed.us/im/directives/>

The following is a partial listing of national and regional Forest Service policies relevant to this Land and Resource Management Plan. A complete listing can be found in Forest Service Manuals and Forest Service Handbooks. Together, these are known as the Forest Service Directives System.

The Directives System is the primary basis for the management and control of all internal programs and serves as the primary source of administrative direction for Forest Service employees. The system sets forth legal authorities, management objectives, policies, responsibilities, delegations, standards, procedures, and other instructions.

The Forest Service Manual (FSM) contains legal authorities, goals, objectives, policies, responsibilities, instructions, and the necessary guidance to plan and execute assigned programs and activities.

Forest Service Handbooks (FSH) are directives that provide instructions and guidance on how to proceed with a specialized phase of a program or activity. Handbooks either are based on a part of the Manual or they incorporate external directives.

Here is a listing of the Forest Service Manual system and referenced Handbooks:

### Forest Service Manuals

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- 1010 Laws, Regulations, and Orders**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_1000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html)
- 1020 Forest Service Mission**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_1000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html)
- 1500 External Relations**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_1000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html)
- 1600 Information Resources**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_1000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html)
- 1900 Planning**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_1000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html)
- 2060 Eco-system Classification, Interpretation, and Application**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2070 Biological Diversity (Reserved)**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2200 Range Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2300 Recreation, Wilderness, and Related Resource Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2400 Timber Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)

- 2500 Watershed and Air Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2600 Wildlife, Fish, and Sensitive Plant Habitat Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2700 Special Uses Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 2800 Minerals and Geology**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_2000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html)
- 3400 Forest Pest Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_3000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_3000.html)
- 5100 Fire Management**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_5000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_5000.html)
- 5400 Land Ownership**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_5000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_5000.html)
- 7400 Public Health and Pollution Control Facilities**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_7000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html)
- 7500 Water Storage and Transportation**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_7000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html)
- 7700 Transportation System**  
[http://www.fs.fed.us/im/directives/dughtml/fsm\\_7000.html](http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html)

#### **Forest Service Handbooks**

- 2509.22 Soil and Water Conservation Handbook**  
[http://www.fs.fed.us/cgi-bin/directives/get\\_dirs/fsh?2509.22!r10\\_all](http://www.fs.fed.us/cgi-bin/directives/get_dirs/fsh?2509.22!r10_all)

## **Federal Statutes**

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### **American Indian Religious Freedom Act of August 11, 1978**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=42&sec=1996](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=42&sec=1996)

Protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects and the freedom to worship through ceremonial and traditional rites.

### **Americans with Disabilities Act of 1990**

<http://www.usdoj.gov/crt/ada/statute.html>

Provides a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities; for clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities; to ensure that the federal government plays a central role in enforcing the standards established in this Act on behalf of individuals with disabilities; and to invoke the sweep of congressional authority, including the power to enforce the fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced by people with disabilities.

### **Anderson-Mansfield Reforestation and Revegetation Act of October 11, 1949**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=581j](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=581j)

Provides for the reforestation and revegetation of National Forest lands and other lands under the administration or control of the Forest Service.

**Antiquities Act of June 8, 1906**

<http://www.cr.nps.gov/local-law/anti1906.htm>

Prevents the appropriation, excavation, injury, or destruction of any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the United States without the permission of the Secretary of the Interior having jurisdiction over the lands on which said antiquities are situated; and authorizes the President to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon lands owned or controlled by the United States to be national monuments, and to reserve as a part thereof parcels of land needed for the proper care and management of the objects to be protected.

**Archaeological Resources Protection Act of October 31, 1979, as amended 1988**

<http://www2.cr.nps.gov/laws/archprotect.htm>

Enacted to secure the protection of archaeological resources and sites on public and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community and private individuals having access to and information related to these resources.

**Architectural Barriers Act of 1968**

<http://www4.law.cornell.edu/uscode/42/4151.html>

Ensures that standards for the design, construction, and alteration of buildings owned, leased, or funded by the United States are prescribed to ensure, wherever possible, that physically handicapped people have ready access to and use of such buildings.

**Bankhead-Jones Farm Tenant Act of July 22, 1937**

<http://laws.fws.gov/lawsdigest/bankjon.html>

Directed the Secretary of Agriculture to develop a program of land conservation and utilization in order to correct maladjustments in land use and thus assist in such things as control of soil erosion, reforestation, preservation of natural resources, and protection of fish and wildlife.

**Clarke-McNary Act of June 7, 1924**

<http://www.senate.gov/~agriculture/Legislation/Agricultural%20Law/Forests/cma.pdf>

Authorizes and directs the Secretary of Agriculture, in cooperation with land grant colleges and universities or with other suitable state agencies, to aid farmers through advice, education, demonstrations, or other similar means in establishing, renewing, protecting, and managing wood lots, shelter belts, windbreakers, and other valuable forest growth, and in harvesting, utilizing, and marketing the products thereof. The Act also authorizes the Secretary to accept, on behalf of the United States, title to any land donated by private land owners to assure future timber supplies or for other national forest purposes.

**Clean Air Act of August 7, 1977, as amended (1977 and 1990)**

<http://www4.law.cornell.edu/uscode/unframed/42/ch85.html>

Enacted to protect and enhance the quality of the Nation's air resources; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to state and local governments in connection with the development and execution of their air pollution prevention and control programs; and, to encourage and assist the development and operation of regional air pollution prevention and control programs.

**Color of Title Act of December 22, 1928**

<http://www4.law.cornell.edu/uscode/43/ch25A.html>

Granted the Secretary of the Interior the authority to issue patents up to 160 acres to

claimants that had held a tract of public land in good faith and in peaceful, adverse possession and had made valuable improvements on the land or reduced it to cultivation. The Act reserved the rights to coal and all other minerals contained therein to the United States.

**Common Varieties of Mineral Materials Act of July 31, 1947**

<http://www4.law.cornell.edu/uscode/30/601.html>

Authorizes the Secretaries of the Interior and Agriculture, under such rules and regulations as they may prescribe, to dispose of mineral materials (including but not limited to common varieties sand, stone, gravel, pumice, pumicite, cinders, and clay) and vegetative materials (including but not limited to yucca, manzanita, mesquite, cactus, and timber or other forest products) on public lands of the United States, if the disposal of such materials is not otherwise expressly authorized by law, is not expressly prohibited by laws of the United States, and would not be detrimental to the public interest.

**Cooperative Forestry Assistance Act of July 1, 1978**

<http://www4.law.cornell.edu/uscode/16/2101.html>

Authorizes the Secretary of Agriculture to assist in the establishment of a coordinated and cooperative federal, state, and local forest stewardship program for the management of non-federal forest lands and forest lands in foreign countries.

**Disaster Relief Act of May 22, 1974**

<http://www4.law.cornell.edu/uscode/42/ch68.html>

Provides an orderly and continuing means of assistance by the federal government to state and local governments in developing, coordinating, and carrying out their disaster relief programs, and provides federal assistance programs for both public and private losses sustained in disasters.

**Eastern Wilderness Act of January 3, 1975**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=1132](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=1132)

Established Wilderness areas in the eastern United States, proposed several more for Wilderness Study, and authorized the Secretary of Agriculture to acquire, through purchase, by gift, exchange, condemnation, or otherwise such lands, waters, or interests therein as determined necessary or desirable for the purposes of the Act.

**Economy Act of June 30, 1932**

<http://www4.law.cornell.edu/uscode/31/1535.html>

Authorizes the head of a federal agency or major organizational unit within an agency to obtain goods or services from a major organizational unit within the same agency or another agency if amounts are available; if it is determined to be in the best interest of the United States government; the agency or unit is able to provide or get by contract the ordered goods or services; and the head of the agency decides ordered goods or services cannot be provided as conveniently or cheaply by a commercial enterprise.

**Emergency Flood Prevention (Agricultural Credit Act) Act of August 4, 1978**

<http://www4.law.cornell.edu/uscode/16/2201.html>

Authorizes the Secretary of Agriculture to undertake emergency measures for runoff retardation and soil-erosion prevention, in cooperation with land owners and users, as the Secretary deems necessary to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or other natural occurrence is causing or has caused a sudden impairment of that watershed.

**Endangered Species Act of December 28, 1973**

<http://laws.fws.gov/lawsdigest/esact.html>

<http://www4.law.cornell.edu/uscode/16/ch35.html>

Authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using Land and Water Conservation Funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain programs for endangered and threatened wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and, authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued there under. Section 7 of the Act requires federal agencies to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

**Energy Security Act of June 30, 1980**

[http://thomas.loc.gov/cgi-bin/  
bdquery/z?d096:SN00932:  
@@L|TOM:/bss/d096query.html](http://thomas.loc.gov/cgi-bin/bdquery/z?d096:SN00932:@@L|TOM:/bss/d096query.html)

Authorizes the Secretary of Agriculture to make available timber resources of the National Forest System, in accordance with appropriate timber appraisal and sale procedures, for use by biomass energy projects.

**Federal Advisory Committee Act of October 6, 1972**

[http://www.nara.gov/fedreg/legal/  
index.html#faca](http://www.nara.gov/fedreg/legal/index.html#faca)

Sets standards and uniform procedures to govern the establishment, operation, administration, and duration of advisory committees.

**Federal Cave Resources Protection Act of November 18, 1988**

[http://laws.fws.gov/lawsdigest/  
caveres.html](http://laws.fws.gov/lawsdigest/caveres.html)

Established requirements for the management and protection of caves and their resources on federal lands, including allowing land managing

agencies to withhold the location of caves from the public, and requiring permits for any removal or collecting activities in caves on federal lands.

**Federal Coal Leasing Amendments Act of August 4, 1976**

[http://thomas.loc.gov/cgi-bin/  
bdquery/z?d094:SN00391:  
@@L|TOM:/bss/d094query.html](http://thomas.loc.gov/cgi-bin/bdquery/z?d094:SN00391:@@L|TOM:/bss/d094query.html)

Authorizes the Secretary of the Interior to divide lands, subject to the Mineral Lands Leasing Act, which have been classified for coal leasing into tracts of such size as he finds appropriate and in the public interest and which can be economically extracted, and, in his discretion, upon the request of any qualified applicant or on his own motion, from time to time offer such lands for leasing by competitive bid.

**Federal Insecticide, Rodenticide, and Fungicide Act of October 21, 1972**

[http://www4.law.cornell.edu/uscode/  
unframed/7/ch6.html](http://www4.law.cornell.edu/uscode/unframed/7/ch6.html)

Requires the Administrator of the Environmental Protection Agency to prescribe standards for the certification of individuals authorized to use or supervise the use of any pesticide that is classified for restricted use; regulates the sale of restricted use pesticides; and provides penalties for the unauthorized use or sale of restricted use pesticides.

**Federal Land Policy and Management Act of October 21, 1976**

[http://www4.law.cornell.edu/  
uscode/unframed/43/ch35.html](http://www4.law.cornell.edu/uscode/unframed/43/ch35.html)

Requires that public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Also

states that the United States shall receive fair market value of the use of the public lands and their resources unless otherwise provided for by law.

**Federal Noxious Weed Act of January 3, 1975**

<http://laws.fws.gov/lawsdigest/fednox.html>

Authorizes the Secretary of Agriculture to designate plants as noxious weeds by regulation; to prohibit the movement of all such weeds in interstate or foreign commerce except under permit; to inspect, seize and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds; and to cooperate with other federal, state and local agencies, farmers associations, and private individuals in measures to control, eradicate, prevent, or retard the spread of such weeds.

**Federal Power Act of June 10, 1920**

<http://laws.fws.gov/lawsdigest/fedpowr.html>

Provides for cooperation between the Federal Energy Regulatory Commission and other federal agencies, including resource agencies, in licensing and relicensing power projects.

**Federal-State Cooperation for Soil Conservation Act of December 22, 1944**

<http://www4.law.cornell.edu/uscode/33/701-1.html>

Authorized the adoption of eleven watershed improvement programs in various states for the improvement of water runoff, water flow retardation, and soil erosion prevention.

**Federal Water Pollution Control Act and Amendments of 1972 (Clean Water Act)**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=33&sec=1251](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=33&sec=1251)

Enacted to restore and maintain the chemical, physical, and ecological integrity of the Nation's waters. Provides for measures to prevent, reduce, and eliminate water pollution; recognizes, preserves, and protects the responsibilities and rights of states to prevent, reduce, and eliminate pollution, and to plan the development and use (including restoration,

preservation, and enhancement) of land and water resources; and provides for federal support and aid of research relating to the prevention, reduction, and elimination of pollution, and federal technical services and financial aid to state and interstate agencies and municipalities for the prevention, reduction, and elimination of pollution.

Established goals for the elimination of water pollution; required all municipal and industrial wastewater to be treated before being discharged into waterways; increased federal assistance for municipal treatment plant construction; strengthened and streamlined enforcement policies; and expanded the federal role while retaining the responsibility of states for day-to-day implementation of the law.

**Federal Water Project Recreation Act of July 9, 1965**

<http://laws.fws.gov/lawsdigest/fwatrr.html>

<http://www4.law.cornell.edu/uscode/unframed/16/4601-12.html>

Requires that recreation and fish and wildlife enhancement opportunities be considered in the planning and development of federal water development.

**Fish and Wildlife Conservation Act of September 15, 1960**

<http://www4.law.cornell.edu/uscode/unframed/16/670a.html>

Requires the Secretaries of the Interior and Agriculture, in cooperation with state agencies, to plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game on public lands under their jurisdiction.

**Fish and Wildlife Coordination Act of March 10, 1934**

<http://laws.fws.gov/lawsdigest/fwcoord.html>

Authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with other federal and state agencies

to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The Act also authorizes the preparation of plans to protect wildlife resources, the completion of wildlife surveys on public lands, and the acceptance by federal agencies of funds or lands for related purposes provided that land donations receive the consent of the state in which they are located.

**Forest Highways Act of August 27, 1958**

<http://www4.law.cornell.edu/uscode/unframed/23/205.html>

Requires that funds available for forest development roads and trails be used by the Secretary of Agriculture to pay for the costs of construction and maintenance thereof, including roads and trails on experimental and other areas under Forest Service administration, or for adjacent vehicular parking areas and sanitary, water, and fire control facilities. Authorizes the Secretary of Agriculture to enter into contracts with a state or civil subdivision thereof, and issue such regulations as he deems desirable.

**Forest and Rangeland Renewable Resources Planning Act of August 17, 1974**

<http://www4.law.cornell.edu/uscode/16/ch36.html>

Directs the Secretary of Agriculture to prepare a Renewable Resource Assessment every ten years; to transmit a recommended Renewable Resources Program to the President every five years; to develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System; and to ensure that the development and administration of the resources of the National Forest System are in full accord with the concepts of multiple use and sustained yield.

**Freedom of Information Act of November 21, 1974**

<http://www4.law.cornell.edu/uscode/unframed/5/ch5.html>

Governs which government records are released to the public either automatically or upon request.

**Geothermal Steam Act of December 24, 1970**

<http://www4.law.cornell.edu/uscode/30/1001.html>

Authorizes the Secretary of the Interior to issue leases for the development and utilization of geothermal steam and associated geothermal resources in any lands administered by him or by the Department of Agriculture, and to prescribe such rules and regulations as he deems appropriate to carry out the provisions of the Act.

**Granger-Thye Act of April 24, 1950**

<http://www4.law.cornell.edu/uscode/16/581i-1.html>

Authorizes the Forest Service to spend appropriated funds on buildings, lookout towers, and other structures on lands owned by states, counties, municipalities, or other political subdivisions, corporations, or individuals; to procure and operate aerial facilities and services for the protection of National Forests; to cooperate with and assist public and private agencies, organizations, institutions, and individuals in performing work on non-forest land for the administration, protection, improvement, reforestation, and other kinds of work as the Forest Service is authorized to do on Forest land; to deposit sums from timber purchases to cover the costs of disposing of brush and debris; to permit the use of structures under its control; to sell nursery stock; and other purposes.

**Historic Sites Act of 1935**

<http://www4.law.cornell.edu/uscode/16/461.html>

Establishes a policy to preserve for public use historic sites, buildings, and objects of national significance for the benefit of the people.

**Historic Preservation Act of October 15, 1966**

<http://www.cr.nps.gov/local-law/nhpa1966.htm>

Establishes a program for the preservation of additional historic properties throughout the nation, and for other purposes.

**Joint Surveys of Watershed Areas Act of September 5, 1962**

<http://www4.law.cornell.edu/uscode/16/1009.html>

Authorizes and directs the Secretaries of the Army and Agriculture to make joint investigations and surveys of watershed areas in the United States, Puerto Rico, and the Virgin Islands, and to prepare joint reports setting forth their recommendations for improvements needed for flood prevention, for the conservation, development, utilization, and disposal of water, and for flood control.

**Knutson-Vandenberg Act of June 9, 1930**

<http://www4.law.cornell.edu/uscode/16/576.html>

Authorizes the Secretary of Agriculture to establish forest tree nurseries; to deposit monies from timber sale purchasers to cover the costs of planting young trees, sowing seed, removing undesirable trees or other growth, and protecting and improving the future productivity of the land; and to furnish seedlings and/or young trees for the replanting of burned-over areas in any National Park.

**Land Acquisition Act of March 3, 1925**

<http://www.wildrockies.org/appeals/68-575.htm>

<http://www4.law.cornell.edu/uscode/16/ch3.html>

Authorizes the Secretary of Agriculture to purchase land for National Forest headquarters, Ranger Stations, dwellings, or other sites required for the effective performance of the authorized activities of the Forest Service.

**Land Acquisition-Declaration of Taking Act of February 26, 1931**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=40&sec=258a](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=40&sec=258a)

Provides for the immediate transfer of land to the United States and for just compensation for such lands.

**Land Acquisition – Title Adjustment Act of July 8, 1943**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=7&sec=2253](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=7&sec=2253)

Authorizes the Secretary of Agriculture to execute and deliver title adjustments if, after the acquisition of the land, the title thereto is legally insufficient for the purposes for which the land was acquired or if the land was acquired through mistake, misunderstanding, error, or inadvertence.

**Land and Water Conservation Fund Act of September 3, 1964**

<http://www4.law.cornell.edu/uscode/16/4601-4.html>

<http://classweb.gmu.edu/jkozlows/lwcfregs.htm>

Authorizes the appropriation of funds for federal assistance to states in planning, acquisition, and development of needed land and water areas and facilities and for the federal acquisition and development of certain lands and other areas for the purposes of preserving, developing, and assuring accessibility to outdoor recreation resources.

**Law Enforcement Authority Act of March 3, 1905**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=559](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=559)

Authorizes all Forest Service employees to make arrests for the violation of the laws and regulations relating to the national forests.

**Leases Around Reservoirs Act of March 3, 1962**

<http://www4.law.cornell.edu/uscode/16/460d-2.html>

Authorizes the Secretary of Agriculture to amend any lease with respect to lands under the jurisdiction of the Forest Service providing for the construction, maintenance, and operation of commercial recreational facilities at a federal reservoir project so as to provide for the adjustment of the amount of rental or other consideration payable to the United States under such lease.

**Mineral Leasing Act of February 25, 1920**

<http://ipl.unm.edu/cwl/fedbook/minerall.html>

Provides that the deposits of certain minerals on land owned by the United States shall be subject to lease to citizens of the United States, provided royalties on such deposits are paid to the United States.

**Mineral Leasing Act for Acquired Lands Act of August 7, 1947**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=30&sec=351](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=30&sec=351)

Extended the provisions of the "mineral leasing laws" to those lands previously acquired by the United States for which they had not been extended, and lands thereafter acquired by the United States.

**Mineral Resources on Weeks Law Lands Act of March 4, 1917**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=520](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=520)

Authorizes the Secretary of Agriculture to permit the prospecting, development, and utilization of the mineral resources of the lands acquired under the Weeks Law.

**Mineral Springs Leasing Act of February 28, 1899**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=495](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=495)

Authorizes the Secretary of Agriculture to rent or lease to responsible persons suitable spaces and portions of ground near, or adjacent to, mineral, medicinal, or other springs within any National Forest where the public is accustomed to or desires to frequent for health or pleasure.

**Mining Claims Rights Restoration Act of August 11, 1955**

<http://www4.law.cornell.edu/uscode/30/621.html>

States that all public lands belonging to the United States which have been withdrawn or reserved for power development or power sites shall be open to entry for location and patent of mining claims and mineral development, subject to certain conditions.

**Mining and Minerals Policy Act of December 31, 1970**

<http://www4.law.cornell.edu/uscode/30/21a.html>

States that it is the policy of the federal government to foster and encourage the development of economically sound and stable domestic mining, minerals, metal, and mineral reclamation industries; the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security, and environmental needs; mining, mineral, and metallurgical research to promote the wise and efficient use of our natural and reclaimable mineral resources; and the study and development of methods for the disposal, control, and reclamation of mineral waste products and the reclamation of mined land.

**Multiple-Use Sustained-Yield Act of June 12, 1960**

<http://ipl.unm.edu/cwl/fedbook/multiu.html>

States that it is the policy of Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and authorizes and directs the Secretary of Agriculture to develop and administer the renewable surface resources of the national forests for the multiple use and sustained yield of the products and services obtained therefrom.

**National Environmental Education Act of November 16, 1970**

<http://ipl.unm.edu/cwl/fedbook/natened.html>

Enacted to establish and support a program of environmental education for students and personnel working with students in schools, institutions of higher education, and related educational facilities, and to encourage postsecondary students to pursue careers related to the environment.

**National Environmental Policy Act of January 1, 1970**

<http://es.epa.gov/oeca/ofa/nepa.html>

Directs all federal agencies to consider and report the potential environmental impacts of proposed federal actions, and established the Council on Environmental Quality.

**National 1990 Farm Bill (title XII – Forest Stewardship Act) Act of November 28, 1990**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=582a](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=582a)

Directs the Secretary of Agriculture to establish a competitive forestry, natural resources, and environmental grants program, and provides for other research programs.

**National Forest Management Act of October 22, 1976**

<http://ipl.unm.edu/cwl/fedbook/nfma.html>

The National Forest Management Act reorganized, expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest lands. The National Forest Management Act requires the Secretary of Agriculture to assess forest lands, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest System. It is the primary statute governing the administration of National Forests.

**National Forest Roads and Trails Act of October 13, 1964**

[http://www.house.gov/resources/105cong/reports/105\\_a/roads\\_.pdf](http://www.house.gov/resources/105cong/reports/105_a/roads_.pdf)

Authorizes the Secretary of Agriculture to provide for the acquisition, construction, and maintenance of forest development roads within and near the National Forests through the use of appropriated funds, deposits from timber sale purchasers, cooperative financing with other public agencies, or a combination of these methods. The Act also authorizes the Secretary to grant rights-of-way and easements over national forest lands.

**National Historic Preservation Act of December 12, 1980 as amended (1980 and 1992)**

<http://www4.law.cornell.edu/uscode/16/470.html>

Authorized the federal government to accelerate its historic preservation programs and activities; to give maximum encouragement to agencies and individuals undertaking preservation by private means; and to assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

**National Trails System Act of October 2, 1968**

<http://ipl.unm.edu/cwl/fedbook/natrail.html>

Established a national system of recreation, scenic, and historic trails by designating the initial components of the system and prescribing the methods and standards through which additional components may be added.

**Native American Graves Protection and Repatriation Act of November 16, 1990**

<http://www4.law.cornell.edu/uscode/25/3001.html>

Directs that the ownership and control of Native American human remains and objects shall be given to the ancestors of the Native American or to the appropriate Native American

tribe.

**Occupancy Permits Act of March 4, 1915**

[http://www.wy.blm.gov/Information/fai/wynf.0001\(99\).pdf](http://www.wy.blm.gov/Information/fai/wynf.0001(99).pdf)

<http://www.wildrockies.org/appeals/63-293.htm>

Authorizes the Secretary of Agriculture to permit, under such regulations as he may prescribe, the use and occupancy of suitable areas of land within the National Forests for the purpose of constructing or maintaining hotels, resorts, or other structures necessary or desirable for recreation, public convenience, or safety; to permit the use and occupancy of suitable land for the purpose of constructing or maintaining summer homes; to permit the use and occupancy of suitable land for the purpose of constructing or maintaining buildings, structures, and facilities for industrial or commercial purposes when such use is consistent with other uses of the National Forest; and to permit any state or political subdivision thereof to use or occupy suitable land for the purpose of constructing or maintaining buildings, structures, or facilities necessary or desirable for education or for any other public use or in connection with any other public activity.

**Oil and Gas Leasing Reform Act of 1987**

<http://thomas.loc.gov/cgi-bin/bdquery/z?d100:HR03545:@.@@D|TOM:/bss/d100query.html>

Amended the Mineral Lands Leasing Act of 1920 regarding competitive leasing of oil and gas for onshore federal lands. Sets forth guidelines for the promulgation of regulations regarding lease sales, and prohibits the issuance of oil or gas leases upon certain lands allocated or designated as Wilderness areas.

**Organic Administration Act of June 4, 1897**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=473](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=473)

Authorizes the President to modify or revoke any instrument creating a National Forest; states that no National Forest may be established except to improve and protect the forest within

its boundaries, for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Authorizes the Secretary of Agriculture to promulgate rules and regulations to regulate the use and occupancy of the National Forests.

**Petrified Wood Act of September 28, 1962**

Document Attached – Post on  
Chugach Web and link

Authorizes the Secretary of Agriculture to promulgate regulations under which limited quantities of petrified wood may be removed from the National Forests.

**Pipelines Act of February 25, 1920**

<http://www4.law.cornell.edu/uscode/30/185.html>

Authorizes the Secretary of the Interior or appropriate agency head to grant rights-of-way through any federal lands for pipeline purposes for the transportation of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product produced there from to any applicant possessing the qualifications provided in the Act.

**Preservation of Historical and Archaeological Data Act of May 24, 1974**

<http://www2.cr.nps.gov/laws/archpreserv.htm>

Authorizes the Secretary of the Interior to undertake the recovery, protection, and preservation of significant scientific, prehistorical, historical, or archeological data whenever any federal agency finds or is notified that activities in connection with any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of such data.

**Public Buildings Cooperative Use Act of 1976**

[http://caselaw.lp.findlaw.com/cascode/uscodes/40/chapters/12/sections/section\\_601a.html](http://caselaw.lp.findlaw.com/cascode/uscodes/40/chapters/12/sections/section_601a.html)

Authorizes the federal government to acquire and utilize space in suitable buildings of historic, architectural, or cultural significance, unless

use of such space would not prove feasible and prudent compared with available alternatives; to encourage the location of commercial, cultural, educational, and recreational facilities and activities within public buildings; to provide and maintain space, facilities, and activities, to the extent practicable, which encourages public access to and stimulates public pedestrian traffic around, into, and through public buildings, permitting cooperative improvements to and uses of the area between the building and the street, so that such activities complement and supplement commercial, cultural, educational, and recreational resources in the neighborhood of public buildings; and to encourage the public use of public buildings for cultural, educational, and recreational activities.

**Public Land Surveys Act of March 3, 1899**

<http://www4.law.cornell.edu/uscode/16/488.text.html>

<http://www.lib.duke.edu/forest/usfscoll/092-097.htm>

Provides that all standard, meander, township, and section lines of the public land surveys shall be established under the direction and supervision of the Commissioner of the General Land Office, whether the lands to be surveyed are within or without reservations, except that where the exterior boundaries of public forest reservations are required to be coincident with standard, township, or section lines, such boundaries may, if not previously established in the ordinary course of the public land surveys, be established and marked under the supervision of the Director of the United States Geological survey. This act made the surveying of forest-reserve lands identical, in all but the establishment of boundaries, with that of the public domain.

**Public Rangelands Improvement Act of October 25, 1978**

[http://caselaw.lp.findlaw.com/casecode/uscodes/43/chapters/37/sections/section\\_1901.html](http://caselaw.lp.findlaw.com/casecode/uscodes/43/chapters/37/sections/section_1901.html)

Establishes and reaffirms the national policy and commitment to inventory and identify

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current public rangeland conditions and trends; manage, maintain and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; charge a fee for public grazing use which is equitable; continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values.

**Rehabilitation Act of 1973, as amended**

[http://caselaw.lp.findlaw.com/casecode/uscodes/29/chapters/16/miscs/0/sections/section\\_701.html](http://caselaw.lp.findlaw.com/casecode/uscodes/29/chapters/16/miscs/0/sections/section_701.html)

States that it is national policy that the federal government plays a leadership role in promoting the employment of individuals with disabilities, and in assisting states and providers of services in fulfilling the aspirations of such individuals with disabilities for meaningful and gainful employment and independent living.

**Renewable Resources Extension Act of June 30, 1978**

[http://caselaw.lp.findlaw.com/casecode/uscodes/16/chapters/36/subchapters/iii/sections/section\\_1671.html](http://caselaw.lp.findlaw.com/casecode/uscodes/16/chapters/36/subchapters/iii/sections/section_1671.html)

Authorizes and directs the Secretary of Agriculture, in cooperation with the state Directors of the Cooperative Extension Service programs, to provide educational programs relating to forest and rangeland renewable resources.

**Reorganization Plan Numbered 3 of 1946**

[http://www.access.gpo.gov/uscode/title5a/5a\\_4\\_8\\_1.html](http://www.access.gpo.gov/uscode/title5a/5a_4_8_1.html)

Creates the Environmental Protection Agency (EPA), abolishes the Federal Water Quality Administration under the Department of the Interior, and transfers those functions to the EPA.

**Research Grants Act of September 6, 1958**

<http://laws.fws.gov/lawsdigest/researc.html>

Authorizes the Secretary of the Interior to enter into contracts with educational institutions, public or private agencies or organizations, or persons to conduct scientific or technological research.

**Right of Eminent Domain Act of August 1, 1888**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=40&sec=257](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=40&sec=257)

Grants the Secretary of the Treasury or any other officer of the government who has been authorized to procure real estate for the erection of a building or for other public uses the authority to acquire such real estate by condemnation, provided such acquisition is otherwise authorized by statute.

**Rural Development Act of August 30, 1972**

<http://www.reeusda.gov/1700/legis/ruraldev.htm>

Enacted to provide multi-state regional agencies, states, counties, cities, multi-county planning and development districts, businesses, industries, Indian tribes on federal and state reservations or other federally recognized Indian tribal groups and others involved with public services and investments in rural areas or that provide or may provide employment in these areas the best available scientific, technical, economic, organizational, environmental, and management information and knowledge useful to them, and to assist and encourage them in the interpretation and application of this information to practical problems and needs in rural development.

**Safe Drinking Water Amendments of November 18, 1977**

<http://thomas.loc.gov/cgi-bin/bdquery/z?d095:SN01528:TOM:/bss/d095query.html>

Amended the Safe Drinking Water Act to authorize appropriations for research conducted

by the Environmental Protection Agency relating to safe drinking water; federal grants to states for public water system supervision programs and underground water source protection programs; and grants to assist special studies relating to the provision of a safe supply of drinking water.

**Secure Rural Schools and Community Self-Determination Act of 2000**

<http://www.fs.fed.us/r10/payments/>

Through this law the Forest Service gives rural communities the means to build and improve schools, provide road maintenance, emergency services, and conservation programs for their citizens. Thus, communities are no longer dependent on federal timber sales from national forests to improve local schools and roads.

**Sikes Act of October 18, 1974**

<http://laws.fws.gov/lawsdigest/sikes.html>

<http://www4.law.cornell.edu/uscode/16/670a.html>

Provides for cooperation between the Secretary of Defense and the Secretary of the Interior to provide for conservation and rehabilitation of natural resources on military installations.

**Small Tracts Act of January 22, 1983**

<http://www4.law.cornell.edu/uscode/16/521e.html>

Authorizes the Secretary of Agriculture to sell, exchange, or interchange by quitclaim deed all right, title and interest, including the mineral estate, of the United States in and to certain lands within the National Forest when he determines it to be in the public interest.

**Smokey Bear Act of May 23, 1952**

[http://caselaw.lp.findlaw.com/cascode/uscodes/18/parts/i/chapters/33/sections/section\\_711.html](http://caselaw.lp.findlaw.com/cascode/uscodes/18/parts/i/chapters/33/sections/section_711.html)

Prohibits the unauthorized use of the "Smokey Bear" character or name.

**Soil and Water Resources Conservation Act of November 18, 1977**

<http://ipl.unm.edu/cwl/fedbook/soilwater.html>

Provides for a continuing appraisal of the United State's soil, water and related resources, including fish and wildlife habitats, and a soil and water conservation program to assist landowners and land users in furthering soil and water conservation.

**Solid Waste Disposal (Resource Conservation & Recovery Act) Act of October 21, 1976**

<http://www4.law.cornell.edu/uscode/42/6901.html>

Promotes the protection of health and the environment and the conservation of valuable material and energy resources by providing technical and financial assistance to state and local governments and interstate agencies for the improvement of solid waste management techniques.

**Supplemental National Forest Reforestation Fund Act of September 18, 1972**

<http://www4.law.cornell.edu/uscode/16/576c.html>

Directs the Secretary of Agriculture to establish a supplemental national reforestation fund, and states that money transferred to this fund shall be available to the Secretary for the purpose of supplementing programs of tree planting and seeding on National Forest lands determined by the Secretary to be in need of reforestation.

**Surface Mining Control and Reclamation Act of August 3, 1977**

[http://caselaw.lp.findlaw.com/cascode/uscodes/30/chapters/25/subchapters/i/sections/section\\_1201.html](http://caselaw.lp.findlaw.com/cascode/uscodes/30/chapters/25/subchapters/i/sections/section_1201.html)

Authorizes the Secretary of Agriculture to enter into agreements with landowners, providing for land stabilization, erosion, and sediment control, and reclamation through A-14

conservation treatment, including measures for the conservation and development of soil, water, woodland, wildlife, and recreation resources, and agricultural productivity of such lands.

**Sustained Yield Forest Management Act of March 29, 1944**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=583](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=583)

Authorizes the Secretaries of Agriculture and the Interior to establish by formal declaration cooperative sustained-yield units which shall consist of federally owned or administered forest land under their jurisdiction and, in addition thereto, land which reasonably may be expected to be made the subject of one or more of the cooperative agreements with private landowners authorized by section 2 of the Act in order to promote the stability of forest industries, of employment, of communities, and of taxable forest wealth through continuous supplies of timber and forest products; and in order to secure the benefits of forests in the maintenance of water supply, regulation of stream flow, prevention of soil erosion, amelioration of climate, and preservation of wildlife.

**Timber Export Act of March 4, 1917**

[http://www.fs.fed.us/r10/chugach/revision/pdfs/timber\\_export\\_act.pdf](http://www.fs.fed.us/r10/chugach/revision/pdfs/timber_export_act.pdf)

Permits the Secretary of Agriculture to allow timber or other forest products to be cut or removed from a national forest and exported from the state or territory in which that national forest is situated.

**Timber Exportation Act of April 12, 1926**

<http://www4.law.cornell.edu/uscode/16/617.html>

Authorizes the exportation of lawfully cut timber from the state or territory where grown if the supply of timber for local use will not be endangered, and authorizes the Secretary to issue rules and regulations to carry out the provisions of the Act.

**Title Adjustment Act of April 28, 1930**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=43&sec=872](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=43&sec=872)

Authorizes the Secretaries of the Interior and Agriculture to execute a quitclaim deed where an application for a conveyance of land has been withdrawn or rejected.

**Toxic Substances Control Act of October 11, 1976**

[http://caselaw.lp.findlaw.com/cascode/uscodes/15/chapters/53/subchapters/i/sections/section\\_2601.html](http://caselaw.lp.findlaw.com/cascode/uscodes/15/chapters/53/subchapters/i/sections/section_2601.html)

Grants the Administrator of the Environmental Protection Agency the authority to regulate chemical substances and mixtures, which present an unreasonable risk of injury to the public health or the environment, and to take action with respect to chemical substances and mixtures, which are imminent hazards.

**Transfer Act of February 1, 1905**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=472](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=472)

Transferred the management and control of the Forest Reserves from the General Land Office (GLO) in the Department of the Interior to the Bureau of Forestry in the Department of Agriculture.

**Twenty-Five Percent Fund Act of May 23, 1908**

<http://www.wildrockies.org/appeals/60-136.htm>

Provides that twenty-five percent of all monies received from the sale of timber or other forest products shall be paid to the state in which such forest is located to be expended as the state may prescribe for the benefit of public schools and roads.

**Uniform Federal Accessibility Standards U.S. Criminal Code (Title 18 USC Chapter 91 – Public Lands) Act of June 25, 1948**

<http://www.wildrockies.org/appeals/80-772.htm>

<http://caselaw.lp.findlaw.com/cascode/uscodes/18/parts/i/chapters/91/toc.html>

Defines the crimes and criminal procedure for crimes committed against public lands.

**U.S. Mining Laws (Public Domain Lands) Act of May 10, 1872**

<http://www4.law.cornell.edu/uscode/30/22.html>

Provides that all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are free and open to exploration and purchase, and the lands in which they are found to occupation and purchase by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, so far as the same are applicable and not inconsistent with the laws of the United States. There are a number of Acts which modify the mining laws as applied to local areas by prohibiting entry altogether or by limiting or restricting the use which may be made of the surface and the right, title, or interest which may pass through patent.

**Volunteers in the National Forests Act of May 18, 1972**

<http://www4.law.cornell.edu/uscode/16/558a.html>

Authorizes the Secretary of Agriculture to recruit, train, and accept without regard to the civil service classification laws, rules, or regulations the services of individuals without compensation as volunteers for or in aid of interpretive functions, visitor services, conservation measures and development, or other activities in and related to areas administered by the Secretary through the Forest Service.

**Water Quality Improvement Act of April 3, 1970**

<http://laws.fws.gov/lawsdigest/fwatrpo.html>

Amends the prohibitions of oil discharges, authorizes the President to determine quantities of oil which would be harmful to the public health or welfare of the United States; to publish a National Contingency Plan to provide for coordinated action to minimize damage from oil discharges. Requires performance standards for marine sanitation device and authorizes

demonstration projects to control acid or other mine pollution, and to control water pollution within the watersheds of the Great Lakes. Requires that applicants for federal permits for activities involving discharges into navigable waters provide state certification that they will not violate applicable water quality standards

**Water Resources Planning Act of July 22, 1965**

<http://www4.law.cornell.edu/uscode/42/1962.html>

Encourages the conservation, development, and utilization of water and related land resources of the United States on a comprehensive and coordinated basis by the federal government, states, localities, and private enterprises.

**Watershed Protection and Flood Prevention Act of August 4, 1954**

<http://www4.law.cornell.edu/uscode/16/1001.html>

Establishes policy that the federal government should cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies for the purposes of preventing erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States; furthering the conservation, development, utilization, and disposal of water, and the conservation and utilization of land; and thereby preserving, protecting, and improving the Nation's land and water resources and the quality of the environment.

**Weeks Act Status for Certain Lands Act of September 2, 1958**

<http://www4.law.cornell.edu/uscode/16/521a.html>

Subjects all lands of the United States within the exterior boundaries of national forests which were or hereafter are acquired for or in connection with the national forests or transferred to the Forest Service for administration and protection substantially in

accordance with national forest regulations, policies, and procedures, excepting (a) lands reserved from the public domain or acquired pursuant to laws authorizing the exchange of land or timber reserved from or part of the public domain, and (b) lands within the official limits of towns or cities, notwithstanding the provisions of any other Act, to the provisions of the Weeks Act of March 1, 1911 (36 Stat. 961), as amended, and to all laws, rules, and regulations applicable to national forest lands acquired thereunder.

**Weeks Act of March 1, 1911**

[http://www.house.gov/resources/105cong/reports/105\\_a/weeks\\_.pdf](http://www.house.gov/resources/105cong/reports/105_a/weeks_.pdf)

Authorizes the Secretary of Agriculture to purchase lands within the watersheds of navigable streams in order to promote regulation of the flow of navigable streams or for the production of timber, provided the legislature of the state in which the lands are located consents to the acquisition. This law is the primary land acquisition authority for the Forest Service.

**Wild Horse Protection Act of September 8, 1959**

<http://www4.law.cornell.edu/uscode/18/47.html>

Established the use of a motor vehicle to hunt, for the purpose of capturing or killing, any wild horse, mare, colt, or burro running at large on the public lands. Also prohibits the pollution of watering holes on public lands for the purposes of trapping, killing, wounding, or maiming any of these animals.

**Wild Horses and Burros Act of December 15, 1971**

<http://www4.law.cornell.edu/uscode/16/1331.html>

Protects wild free-roaming horses and burros from capture, branding, harassment, or death; and states they are to be considered in the area where presently found an integral part of the natural system of the public lands.

**Wild and Scenic Rivers Act of October 2, 1968**

<http://www4.law.cornell.edu/uscode/16/1271.html>

Instituted a National Wild and Scenic Rivers System by designating the initial components of that system, and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

**Wilderness Act of September 3, 1964**

<http://www4.law.cornell.edu/uscode/16/1131.html>

Established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas" and administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as Wilderness. Provides for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. States that no federal lands shall be designated as "wilderness areas" except as provided for in the Act or by a subsequent Act.

**Wilderness Act of 1975 (Public Law 93-622; 93rd Congress, S 3433), January 3, 1975**

Designated several Wilderness areas nation-wide, including Joyce Kilmer-Slickrock Wilderness (15,000 acres) in Nantahala and Cherokee National Forests and Gee Creek Wilderness (2,570 acres) in Cherokee National Forest; designated several wilderness study areas nation-wide, including Big Frog Wilderness Study Area (4,500 acres) and Citico Creek Area (14,000 acres) of the Joyce Kilmer-Slickrock Wilderness; provided direction for management of wilderness study areas.

**Wildlife Game Refuges Act of August 11, 1916**

[http://caselaw.lp.findlaw.com/scripts/ts\\_search.pl?title=16&sec=683](http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=683)

Authorizes the President of the United States to set aside lands for the protection of game animals, birds, or fish; and prohibits the hunting, catching, trapping, willful disturbance, or killing of any kind of game animal, game or non-game bird, or fish, or the taking of eggs of any such bird on any lands so set aside or in or on the waters thereof.

**Wood Residue Utilization Act December 19, 1980**

<http://caselaw.lp.findlaw.com/cascode/uscodes/16/chapters/36/subchapters/iv/toc.html>

Enacted to develop, demonstrate, and make available information on feasible methods that have the potential for commercial application to increase and improve utilization in residential, commercial, and industrial or power plant applications of wood residues resulting from timber harvesting and forest protection and management activities occurring on public and private forest lands, and from the manufacture of forest products, including wood pulp.

**Woodsy Owl/Smokey Bear Act of June 22, 1974**

[http://caselaw.lp.findlaw.com/cascode/uscodes/18/parts/i/chapters/33/sections/section\\_711a.html](http://caselaw.lp.findlaw.com/cascode/uscodes/18/parts/i/chapters/33/sections/section_711a.html)

Prohibits the unauthorized manufacture, reproduction, or use of the character "Woodsy Owl," the name "Woodsy Owl," or the associated slogan "Give a Hoot, Don't Pollute." Also prohibits the unauthorized manufacture, reproduction, or use of the character "Smokey Bear" or the name "Smokey Bear," or a facsimile or simulation of such character or name.

**Youth Conservation Corps Act of August 13, 1970**

<http://www4.law.cornell.edu/uscode/16/1701.html>

Establishes a Youth Conservation Corps whom the Secretaries of the Interior or Agriculture may employ without regard to

the civil service or classification laws, rules, or regulations for the purpose of developing, preserving, or maintaining the lands and waters of the United States.

## Regulations

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### **33 CFR 323 Permits for Discharges of Dredged or Fill Material into Waters of the United States**

<http://www4.law.cornell.edu/cfr/33p323.htm#33p323s>

This regulation prescribes those special policies, practices and procedures to be followed by the Corps of Engineers in connection with the review of applications for permits to authorize the discharge of dredged or fill material into waters of the United States.

### **36 CFR 60 National Register of Historic Places**

<http://www4.law.cornell.edu/cfr/36p60.htm#start>

Sets forth the procedural requirements for listing properties on the National Register.

### **36 CFR 63 Determinations of Eligibility for Inclusion in the National Register of Historic Places**

<http://www4.law.cornell.edu/cfr/36p63.htm#start>

Developed to assist agencies in identifying and evaluating the eligibility of properties for inclusion in the National Register, and to explain how to request determinations of eligibility.

### **36 CFR 65 National Historic Landmarks Program**

<http://www4.law.cornell.edu/cfr/36p65.htm#start>

Sets forth the criteria for establishing national significance and the procedures used by the Department of the Interior for conducting the National Historic Landmarks Program.

### **36 CFR 68 The Secretary of the Interior's Standards for Historic Preservation Projects**

<http://www4.law.cornell.edu/cfr/36p68.htm#start>

Sets forth standards for the treatment of historic properties containing standards for preservation, rehabilitation, restoration, and reconstruction. These standards apply to all proposed grant-in-aid development projects assisted through the National Historic Preservation Fund.

### **36 CFR 212 Forest Development Transportation System**

<http://www4.law.cornell.edu/cfr/36p212.htm#start>

Sets forth the requirements for the development and administration of the forest development transportation system.

### **36 CFR 213 Administration Under Bank-Jones Act**

<http://www4.law.cornell.edu/cfr/36p213.htm#start>

Sets forth the requirements relating to the designation, administration, and development of National Grasslands.

### **36 CFR 219 Planning**

<http://www4.law.cornell.edu/cfr/36p219.htm#start>

Sets forth a process for developing, adopting, and revising land and resource management plans for the National Forest System.

### **36 CFR 221 Timber Management Planning**

<http://www4.law.cornell.edu/cfr/36p221.htm#start>

Sets forth the requirements for management plans for National Forest timber resources.

### **36 CFR 222 Range Management**

<http://www4.law.cornell.edu/cfr/36p222.htm#start>

Sets forth the requirements for range management on the National Forests, and for the administration of wild and free-roaming horses and burros and their environment.

**36 CFR 223 Sale and Disposal of National Forest System Timber**

<http://www4.law.cornell.edu/cfr/36p223.htm#start>

Sets forth the requirements relating to the sale and disposal of National Forest System timber.

**36 CFR 228 Minerals**

<http://www4.law.cornell.edu/cfr/36p228.htm#start>

Sets forth the rules and procedures through which use of the surface of National Forest System lands, in connection with mining and mineral operations, shall be conducted so as to minimize adverse environmental impacts on National Forest System surface resources.

**36 CFR 241 Fish and Wildlife**

<http://www4.law.cornell.edu/cfr/36p241.htm#start>

Sets forth the rules and procedures relating to the management, conservation, and protection of fish and wildlife resources on National Forest System lands.

**36 CFR 251 Land Uses**

<http://www4.law.cornell.edu/cfr/36p251.htm#start>

Sets forth the rules and procedures relating to the use and occupancy of National Forest System lands.

**36 CFR 254 Landownership Adjustments**

<http://www4.law.cornell.edu/cfr/36p254.htm#start>

Sets forth the rules and procedures relating to exchange and conveyance of National Forest System lands.

**36 CFR 261 Prohibitions**

<http://www4.law.cornell.edu/cfr/36p261.htm#start>

Sets forth the general prohibitions relating to the use and occupancy of National Forest System lands.

**36 CFR 291 Occupancy and Use of Developed Sites and Areas of Concentrated Public Use**

<http://www4.law.cornell.edu/cfr/36p291.htm#start>

Provides for fees charged for the occupancy and use of developed sites and areas of concentrated public use.

**36 CFR 292 National Recreation Areas**

<http://www4.law.cornell.edu/cfr/36p292.htm#start>

Sets forth the requirements for the administration of National Recreation Areas.

**36 CFR 293 Wilderness-Primitive Areas**

<http://www4.law.cornell.edu/cfr/36p293.htm#start>

Sets forth the requirements for the administration of Wilderness and primitive areas.

**36 CFR 294 Special Areas**

<http://www4.law.cornell.edu/cfr/36p294.htm#start>

Sets forth the requirements for designation of special recreation areas.

**36 CFR 295 Use of Motor Vehicles Off Forest Development Road**

<http://www4.law.cornell.edu/cfr/36p295.htm#start>

Sets forth the rules and procedures relating to the administrative designation and location of specific areas and trails of National Forest System lands on which the use of motor vehicles traveling off of National Forest development roads is allowed.

**36 CFR 296 Protection of Archaeological Resources**

<http://www4.law.cornell.edu/cfr/36p296.htm#start>

Implements the provisions of the Archaeological Resources Protection Act.

**36 CFR 297 Wild and Scenic Rivers**

<http://www4.law.cornell.edu/cfr/36p297.htm#start>

Sets forth the rules and procedures relating to federal assistance in the construction of water resources projects affecting Wild and Scenic Rivers or study rivers on lands administered by the Secretary of Agriculture.

**36 CFR 800 Protection of Historic Properties**

<http://www4.law.cornell.edu/cfr/36p800.htm#start>

Sets forth the provisions for the administration of the National Historic Preservation Act.

**40 CFR 121-135 Water Programs**

<http://www4.law.cornell.edu/cfr/40p121.htm#40p121s>

Sets forth the provisions for the administration of water programs including: State certification of activities requiring a federal license or permit; EPA administered permit programs; State program requirements; procedures for decision making; criteria and standards for the National Pollutant Discharge Elimination System; toxic pollutant effluent standards; water quality planning and management; water quality standards; water quality guidance for the Great Lakes System; secondary treatment regulation; and, prior notice of citizen suits. Title 40 (Protection of Environment), Chapter 1 (Environmental Protection Agency), subchapter D (Water Programs).

**40 CFR 1500 Council on Environmental Quality**

<http://www4.law.cornell.edu/cfr/40p1500.htm#start>

Council on Environmental Quality regulations implementing the National Environmental Policy Act.

**43 CFR 10 Native American Graves Protection and Repatriation Act Regulations**

<http://www4.law.cornell.edu/cfr/43p10.htm#43p10s>

Implements the provisions of the Native American Graves Protection and Repatriation Act of 1990.

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## **Executive Orders**

**EO 12898 Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations**

<http://www.fs.fed.us/land/envjust.html>

Addresses Environmental Justice in minority and low-income populations and is designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. The order is also intended to promote non-discrimination in Federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.

**EO 11593 Protection and Enhancement of Cultural Environment**

<http://archnet.asu.edu/archnet/topical/crm/usdocs/execord.htm>

States that the federal government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation, and that federal agencies shall administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people; and, in consultation with the Advisory Council on Historic Preservation, institute procedures to assure that federal plans and programs contribute to the preservation and enhancement

of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

**EO 11990 Protection of Wetlands**

<http://hydra.gsa.gov/pbs/pt/call-in/eo11990.htm>

Requires each federal agency to provide leadership and to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for acquiring, managing, and disposing of federal lands and facilities; providing federally undertaken, financed, or assisted construction and improvements; and conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

**EO 11644 (amended by EO 11989) Use of Off-Road Vehicles**

<http://www.nara.gov/fedreg/codific/eos/e11644.html>

Establishes policies and provides for procedures that ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

**EO 11988 Floodplain Management**

<http://hydra.gsa.gov/pbs/pt/call-in/eo11988.htm>

Requires each federal agency to provide leadership and to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for acquiring, managing, and disposing of federal lands and facilities; providing federally undertaken, financed, or assisted construction and improvements; and conducting federal activities and programs

affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

**EO 12088 Federal Compliance with Pollution Control Standards (Amended by E.O. 12580, January 23, 1987)**

<http://hydra.gasa.gov/pbs/pt/call-in/eo12088.htm>

Delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the Environmental Protection Agency authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.

**EO 12372 Intergovernmental Review of Federal Programs**

<http://www.nara.gov/fedreg/codific/eos/e12372.html>

Issued to foster an intergovernmental partnership and a strengthened federalism by relying on State and local government coordination and review of proposed Federal financial assistance and direct federal development. It requires federal agencies to provide opportunities for consultation by elected officials of those State and local governments that would provide the non-federal funds for, or that would be directly affected by, proposed federal financial assistance or direct federal development. It also allows states to develop their own process or refine existing processes for state and local elected officials to use in reviewing and coordinating proposed federal financial assistance and direct federal development.

**EO 12862 Setting Customer Service Standards**

<http://www.usbr.gov/laws/eo12862.html>

<http://govinfo.library.unt.edu/npr/library/direct/orders/2222.html>

Requires all executive departments and agencies that provide significant services directly to the public to provide those services in a manner that seeks to meet the customer service standard established in the Order, and requires agencies to identify customers, survey customers and front-line employees to determine the kind and quality of services needed and barriers to those services, benchmark customer service performance against the best in the business, make information, services, and complaint systems easily accessible, and provide a means to address customer complaints.

#### **EO 13007 Indian Sacred Sites**

<http://hydra.gsa.gov/pbs/pt/call-in/eo13007.htm>

Requires each executive branch agency with statutory or administrative responsibility for the management of federal lands, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

## **Agreements and Memorandums of Understanding**

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**Memorandum of Understanding; United States Department of Transportation, Federal Highway Administration and USDA, Forest Service. dated 8/20/98**

### **Minerals**

#### **Legal and Administrative Framework**

Statutory and regulatory direction separates mineral resources in the publicly owned lands of the United States into three categories: locatable,

leasable and salable. Statutes, regulations and Executive Orders guide Forest Service policy governing the exploration and development of mineral activities on National Forest System lands. Management direction for mineral resources on the Sumter National Forest can be found in the following areas:

#### **36 CFR 228, Subpart A (Locatable Minerals), Subpart C (Salable Minerals), and Subpart E (Leasable Minerals).**

#### **U.S. Mining Laws Act of May 10, 1872—**

applies to all mineral deposits in national forest lands reserved from the public domain, or which were acquired by exchange under the Act of March 20, 1922, and National Grasslands, or other Title III lands transferred from the public domain, except for oil, gas, oil shale, coal and other "leasing act" minerals, and mineral materials, including, but not limited to, sand and gravel. Mining laws do not apply to lands situated in Minnesota, Michigan, Wisconsin, Alabama, Missouri, and Kansas; and certain lands in Oklahoma. Generally declared that all valuable locatable mineral deposits and public domain lands where they are found are free and open to exploration, occupation, and purchase under regulations prescribed by law.

#### **Mineral Resources on Weeks Law Lands Act of March 4, 1917—**

Authorizes the Secretary of Agriculture to permit the prospecting, development, and utilization of mineral resources on lands acquired under the Weeks Act of 1911 (subject to section 402 of Reorganization Plan No. 3, of July 16, 1946 that transferred the function to the Secretary of Interior. The Functions Transfer Act of June 11, 1960 transferred the function back to the Secretary of Agriculture with respect to mineral materials only (sand and gravel).

#### **Mineral Leasing Act of February 25, 1920**

—Provides for leasing of energy minerals (coal, oil, gas, oil shale), sodium, phosphate, and

potassium on all lands owned by the United States, except for those acquired under the Weeks Act of March 1, 1911. The Bureau of Land Management (BLM) is the federal government's leasing agency.

**Minerals Materials Act of July 31, 1947**

—Authorizes the disposal of mineral and vegetative materials through a sales system on public lands of the United States. The law also provides for free use of these materials by federal or state agencies, municipalities, or nonprofit associations, if not for commercial, industrial, or resale purposes.

**Mineral Leasing Act for Acquired Lands of August 7, 1947**—Extends the provisions of the mineral leasing system to all acquired federal minerals, including those within the National Forests, unless excepted by the Act. It requires the consent of the Secretary of Agriculture prior to the BLM issuing a lease covering acquired lands administered by the Forest Service.

**Multiple Use Mining Act of 1955, Act of July 23, 1955 (Public Law 84-167)**—Amended sections 1 and 2 of the Materials Act of 1947. This legislation defined “common varieties” of mineral materials, and distinguished them from rare varieties, that may be locatable in certain states under the Mining Laws of 1872.

**Mineral Leasing Act Revision of 1960**—

Established a system of leasing public lands through either a competitive bidding process, utilized when BLM determined the lands to be within a known geological structure (KGS); or by one of two non-competitive leasing processes, an “over-the-counter” application process for non-KGS lands that had never been leased before; and a simultaneous lottery type system (SIMO) for non-KGS lands that had been previously leased.

**Multiple-Use Sustained-Yield Act of 1960**—The Act established the multiple use principles

on which the National Forest Management Act of 1976 is based. The Multiple-Use Sustained-Yield Act specifically addresses the role of minerals in the management of the National Forests. The Act states, “Nothing herein shall be construed so as to affect the use or administration of the mineral resources of national forest system lands ...”

**Wild and Scenic Rivers Act of October 2, 1968**

—Under the Act, the minerals in federal lands which are part of the system and constitute the bed or bank, or are situated within one-quarter mile of the bank of any river segment which is designated a wild river under this Act, are withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws. This restriction does not apply to those segments of a Wild and Scenic River that are designated as “scenic” or “recreational.”

**Mining and Minerals Policy Act of 1970**—

Establishes a national minerals policy, and states in part: “The Congress declares that it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries; and 2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs.”

**Federal Land Policy and Management Act of 1976**

—Public lands and their resources will be periodically and systematically inventoried, and their present and future use projected through a land use planning process. Also requires that the “public lands be managed in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber and fiber from public lands, including implementation of the Mining and Minerals Policy Act of 1970.”

**Surface Mining Control and Reclamation Act of 1977**—Prohibits surface (strip) mining of coal on federally administered lands located east of the 100<sup>th</sup> Meridian.

**Energy Security Act of June 30, 1980**—Directs the Secretary of Agriculture to process applications for leases and permits to explore, drill and develop resources on National Forest System lands, notwithstanding the current status of the Land and Resource Management Plan (Forest Plan).

**Federal Onshore Oil and Gas Leasing Reform Act of 1987**—Provides additional authority for the Forest Service in regard to leasing and administration of surface operations during oil and gas development. The BLM may not issue any lease on National Forest public domain lands over the objection of the Secretary of Agriculture. Forest Service must approve and administer all surface disturbing activities on leases issued on National Forest lands. The Act repealed the Known Geologic Structures (KGS) process and the Simultaneous leasing system (SIMO). The Act established a 2-level leasing process: 1) all tracts are offered competitively to the highest bidder, with a minimum bonus bid of not less than \$2/acre, in addition to the annual rental; and 2) tracts offered for competitive sale which receive no bids, and for which no pre-sale applications were received, are then available non-competitively (“over-the-counter”) for 2 years after the sale. The competitive lease sale notices must be posted in the appropriate FS office for 45 days prior to the competitive lease sale. Prior to approval of applications for permits to drill (APD’s) or lease modifications, a notice must be posted for 30 days prior approval.

**Executive Order 13212 (Actions to Expedite Energy-related Projects) of May 18, 2001**—Executive departments and agencies shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or

conservation of energy. For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environment protections.

**Onshore Oil and Gas Order #1**—States the necessary requirements for the approval of all proposed exploratory, development, and service wells. The Order requires the lessee/operator to submit a Surface Use Plan of Operation and a Drilling Plan as part of the Application for Permit to Drill (APD). Both the Forest Service and the BLM must approve the APD prior to drilling operations commencing on NF lands. The Forest Service adopted the section of BLM’s Onshore Oil and Gas Order #1 that dealt with Surface Use Plans of Operation, and incorporated it as Appendix A of 36 CFR 228E.

**Forest Service Regulations at 36 CFR 219.22**—Requires that outstanding and reserved mineral rights (private mineral rights under NFS surface) shall be recognized to the extent practicable in forest planning.

**Forest Service Regulations at 36 CFR 219.22 (f)**—Specifically addresses minerals in Forest plans:

The following shall be recognized to the extent practicable in forest planning: (f) the probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development.

#### **Lands Statutorily Withdrawn from Mineral Entry or Mineral Leasing**

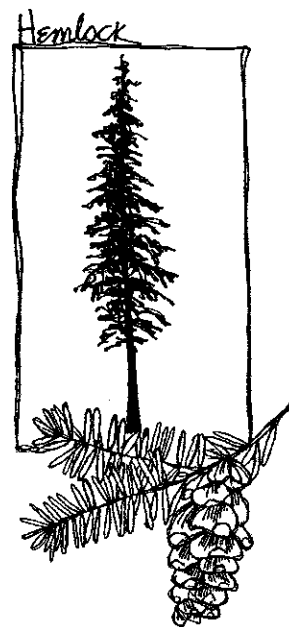
1. Subject to valid existing rights then existing effective January 1, 1984, the minerals in lands designated under the Wilderness Act of September 3, 1964, are withdrawn from all forms of appropriation under the mining laws

and from disposition under all laws pertaining to mineral leasing. The Sumter National Forest has one congressionally designated wilderness, Ellicott Rock, 2,855 acres, which is statutorily withdrawn from mineral entry or leasing.

2. Subject to valid existing rights, the minerals in federal lands, which constitute the bed or bank, or are situated within  $\frac{1}{4}$  mile of the bank of any river designated a "Wild River" under this Act, are withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws.

On the Sumter National Forest, there is one W&SR river, the Chattooga. See prescription 2.a.1. in chapter 3 for detailed information.

Note: This restriction does not apply to those segments of a Wild and Scenic River that are designated as "scenic" or "recreational." Elsewhere, the W&SR sections of the FEIS and Forest Plan should list the Wild & Scenic Rivers, their classification, the miles of river in each category, how many acres fall within  $\frac{1}{4}$  mile of any wild segments, and the acreage within the various river category management area corridors. If the width of the management corridor for the wild segment of the river exceeds the  $\frac{1}{4}$  mile area statutorily withdrawn, then a standard should be established for those acres outside the  $\frac{1}{4}$  mile, but within the corridor (possibly leasing with no surface occupancy). For the corridor areas, which are managed as scenic or recreational, a controlled surface use stipulation could be adopted which precludes any long term surface disturbance which would alter the esthetics of the area which qualified it for inclusion in the W&SR system. By using this stipulation, short-term use, such as running a seismic line during the summer, could be authorized.



# Appendix B

## Glossary

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### Acronyms

AMS	Analysis of the Management Situation	LOAS	land ownership adjustment strategy
ARPA	Archaeological Resource Protection Act	LWCF	land and water conservation fund
ASQ	allowable sale quantity	LWD	large woody debris
AQRV	air quality related values	MMCF	million cubic feet
BA	basal area	NEPA	National Environmental Policy Act
BF	board foot	NFMA	National Forest Management Act
BLM	Bureau of Land Management	NIPF	non-industrial private forest
BMP	best management practices	NSO	no surface occupancy
CAA	Clean Air Act	NFS	National Forest System
CCF	hundred cubic feet	OHV	off-highway vehicle
CEQ	Council on Environmental Quality	PETS	proposed, endangered, threatened species
CF	cubic foot	PRLA	Preference Right Lease Application
CFL	commercial forest land	RAP	road analysis process
CFR	Code of Federal Regulations	ROS	recreation opportunity spectrum
DBH	diameter at breast height	ROW	right(s)-of-way
DEIS	Draft Environmental Impact Statement	SAA	<i>Southern Appalachian Assessment</i>
DHEC	Department of Health and Environmental Control	SC	South Carolina
EIS	Environmental Impact Statement	SIO	scenic integrity objectives
EPA	Environmental Protection Agency	SMP	smoke management programs
FEIS	Final Environmental Impact Statement	SMS	scenery management system
FSH	Forest Service Handbook	SPB	southern pine beetle
FSM	Forest Service Manual	TMDL	total mean daily load
FW	Forest-wide	USDA	United States Department of Agriculture
FMP	fire management plan	WUI	wildland urban interface
GIS	geographic information system		
HPP	heritage preservation plans		
KBDI	Kutch-Byrum Drought Index		

## Definitions

Definitions were taken from the following sources:

Code of Federal Regulations (CFR) Title 36, Parks, Forests, and Public Property, Chapter II, Forest Service, Department of Agriculture; Part 219, Planning, Section A National Forest System Land and Resource Management Planning; Section 219.3, Definitions and Terminology, Revised July 1, 1998. (Referred to as 36 CFR 219.3)

Forest IDT is the Interdisciplinary Team on the Chattahoochee-Oconee NFs. (Referred to as Forest IDT)

Society of American Foresters. 1998. The Dictionary of Forestry. Edited by John A. Helms. 210 p. (Referred to as SAF)

Timber Staff is the Timber Staff on the Chattahoochee-Oconee NFs. (Referred to as Timber Staff)

USDA Forest Service, Final Environmental Impact Statement for the Sumter National Forests Land and Resource Management Plan, Southern Region, Supervisor's Office, Cikumbia, SC 2004. (Referred to as FEIS.)

Forest Service Handbook (FSH) 2090.11, Ecological Classification and Inventory Handbook, WO Amendment 2090.11-91-1, Effective 4/26/91, 05—Definitions. (Referred to as FSH 2090.11-05)

FSH 2409.13, Timber Resource Planning Handbook, WO Amendment 2409.13-92-1, Effective 8/3/92, 05—Definitions. (Referred to as FSH 2409.13-05)

FSH 2409.15, Timber Sale Administration Handbook, Amendment No. 2409.15-96-2, Effective Sept. 19, 1996, 05—Definitions. (Referred to as FSH 2409.15-05)

FSH 2409.17, Silvicultural Practices Handbook, 1/85 WO, Chapter 9—Timber Stocking Guides and Growth Predictions, 9.05—Definitions. (Referred to as FSH 2409.17-9.05)

FSH 2609.13, Wildlife and Fisheries Program Management Handbook, WO Amendment 2609.13-92-1, Effective 8/3/

92, Chapter 70—Analysis of Economic Efficiency of Wildlife and Fisheries Projects, 70.5—Definitions. (Referred to as FSH 2609.70.5)

FSH 2709.12, Road Rights-of-Way Grants Handbook, 9/85 WO, Zero Code, 05—Definitions. (Referred to as FSH 2709.12-05)

Forest Service Manual (FSM) 1900—Planning, Amendment No. 1900-91-3, Effective March 15, 1991, 1905—Definitions. (FSM 1905)

FSM 2163, Hazardous Waste Management, Chapter 2163.05, Definitions. (Referred to as FSM 2163)

FSM 2200, Range Management, WO Amendment 2200-91-1 Effective 3/1/91, Chapter 2230, Grazing and Livestock Use Permit System, 2230.5—Definitions. (Referred to as FSM 2230)

FSM 2300, Recreation, Wilderness, and Related Resource Management, Amendment No. 2300-91-3 Effective March 12, 1991. Chapter 2355, Off-Road Vehicle Use Management, Executive Order 116-44, as amended by Executive Order 11989, Use of Off-Road Vehicles on the Public Lands 37 FR 2877 (Feb. 9, 1972), 42 FR 26959 (May 25, 1977). (Referred to as FSM 2355)

FSM 2300, Recreation, Wilderness, and Related Resource Management, WO AFSM 2300—Recreation, Wilderness, and Related Resource Management, WO Amendment 2300-90-1, Effective 6/1/90, Chapter 2310—Planning and Data Management—2312—Recreation Information Management (RIM). (Referred to as (FSM 2312)

FSM 2400, Timber Management, WO Amendment 2400-96-6 Effective 9/24/96. Chapter 2435—Salvage Sales. 2435.05, Definitions. (FSM 2435)

FSM 2500, Watershed and Air Management, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. 2521—Watershed Condition Assessment. 2521.05—Definitions. (Referred to as FSM 2521)

FSM 2500, Watershed and Air Management, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. FSM 2526—Riparian Area Management. 2526.05—Definitions. (Referred to as FSM 2526)

FSM 2600, Wildlife, Fish, and Sensitive Plant Habitat Management, Amendment No. 2600-91-8 Effective Oct. 22, 1991, Chapter 2605, Definitions. (Referred to as FSM 2605)

FSM 2600, Wildlife, Fish, and Sensitive Plant Habitat Management, WO Amendment 2600-95-7, Effective 6/23/95, Chapter 2670, Threatened, Endangered, and Sensitive Plants and Animals, 2670.5—Definitions. (Referred to as FSM 2670)

A User's Guide to Forest Information Retrieval (FIR), Southeastern Forest Experiment Station, Forest Inventory and Analysis Unit, Asheville, NC, 1988. (Referred to as FIR) Interim Resource Inventory Glossary, File 1900, Washington, DC, 96 p., June 14, 1989. (Referred to IRIG)

## A

**accessibility**—The relative ease or difficulty of getting from or to someplace, especially the ability of a site, facility or opportunity to be used by persons of varying physical and mental abilities.

**acid deposition**—Rain, snow, or particulate matter containing high concentrations of acid anions (e.g., nitrate and sulfate), usually produced by atmospheric transformation of the byproducts of fossil fuel combustion. Precipitation with a pH lower than 5.0 is generally considered to be acidic.

**acid neutralizing capacity**—The total capacity of a water supply to neutralize acids, as determined by titration with a strong acid. Acid neutralizing capacity includes alkalinity (e.g., carbonate) plus base cations.

**acidification** —To convert into an acid or become acid.

**Agriculture Conservation Program**—USDA cost-share program for streambank improvement.

**acquisition of land**—Obtaining full landownership rights by donation, purchase, exchange, or condemnation.

**acre-equivalents**—The number of acres of forest habitat improved or affected by the installation of various wildlife habitat improvements in an area. Determined by multiplying by various coefficients.

**acre-foot**—A measurement of water volume, equal to the amount of water that would cover an area of 1 acre to a depth of 1 foot (specifically 43,560 cubic feet or 325,851 gallons).

**activity**—A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental quality objectives.

**adaptive management** —A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure objectives are being met.

**administrative unit** —All the National Forest System lands where one forest supervisor has responsibility. The basic geographic management area within a Forest Service Region, station, or area.

**advance regeneration (reproduction)**—Seedlings or saplings that develop, or are present, in the understory.

**aerial logging**—A yarding system employing aerial means, (e.g., helicopters, balloons), to lift logs.

**afforestation**—Establishment of a forest or stand in an area not recently forested.

**age class** —A grouping of living things based on their age.

**age class (cohort)** —A distinct aggregation of trees originating from a single natural disturbance or regeneration cutting.

**Age dependent relationships**—Complex yield composite relationships between independent and dependent variables that vary by the age of the understory and/or the overstory.

**agricultural land** —Areas used primarily for production of food and/or fiber (excludes wood fiber). Examples include cropland, pasture, orchards, vineyards, nurseries, confined feeding areas, farmsteads, and ranch headquarters.

**air pollution**—Any substance or energy form (heat, light, noise, etc.) that alters the state of the air from what would naturally occur.]

**air quality class**—Three broad classifications used to prevent significant deterioration of air quality for all areas of the country.

Class I—All areas where essentially any degradation of air quality would be considered significant deterioration.

Class II—All areas where moderate degradation over baseline concentrations are allowed.

Class III—All others.

**all aged stand**—A stand with trees of all, or almost all age classes, including those of exploitable age.

**allocated fund**—Funds transferred from one agency or bureau to another for carrying out the purpose of the parent appropriation and agency.

**allocation**—The assignment of management prescriptions or combination of management practices to a particular land area to achieve the goals and objectives of the alternative.

**allopatric** —Condition where one species lives in a section of stream without other closely related species. The species have disjunct distributions. Opposite of sympatric.

**allotment management plan**—The basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

**allowable sale quantity**—The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Forest Plan. This quantity is usually expressed on an annual basis as the “average annual allowable sale quantity.”

**all-terrain vehicle**—Any motorized, off-highway vehicle 50 inches or less in width, having a dry weight of 600 pounds or less that travels straddled by the operator. Low-pressure tires are six inches or more in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (psi) or less as recommended by the vehicle manufacturer.

**alternative**—In forest planning, a mix of resource outputs designed to achieve a desired management emphasis as expressed in goals and objectives, and in response to public issues or management concerns.

**amendment**—A formal alteration of the Forest Plan by modification, addition, or deletion. Forest Plan amendment requires an environmental analysis. Significant findings require an environmental impact statement and the amendment will follow the same procedure used for plan preparation. Insignificant findings allow the changes to be implemented following public notification. Amendments can take place at any time following plan approval.

**amenity values**—Features or qualities which are pleasurable or aesthetic, as contrasted with the utilitarian features of a plan, project, location, or resource.

**analysis area**—A collection of lands, not necessary contiguous, sufficiently similar in character, that they may be treated as if they were identical.

**analysis area identifier**—A resource characteristic used to stratify the land into capability areas and analysis areas.

**Analysis of the Management Situation**—A determination of the ability of the planning area to supply goods and services in response to society's demand. The AMS is contained in a 35-page report available from the Forest Supervisor. The Forest Plan includes a

summary of the AMS. Information from it is contained throughout the EIS/Plan.

**animal unit month**—The quantity of forage required by one mature cow and her calf (or the equivalent, in sheep or horses), for one month; 682 pounds of air-dry forage.

**annual forest program**—The summary or aggregation of all projects that make up an integrated (multifunctional) course of action for a given level of funding of a forest planning area that is consistent with the Forest Plan.

**annual work planning process**—Preparation of technical plans that serve to implement land and resource management, and program decisions contained in the integrated land, resource plans, and budget allocations.

**appropriated fund**—Funds available for obligation or outlay by Congress to a given agency.

**appropriate management response**—The response to a wildland fire based on an evaluation of risks to firefighter and public safety. Circumstances under which the fire occurs, including weather and fuel conditions, natural and cultural resource management objectives, protection priorities, and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall logic, geographic area, or national wildland fire situation.

**aquatic ecosystem**—Components that include: the stream channel, lake and estuary beds, water, biotic community, and associated habitat features. Also included are streams and lakes with intermittently, semipermanently, and seasonally flooded channels or streambeds. In the absence of flowing water, intermittent streams may have pools or surface water.

**aquatic habitat types**—The classification of instream habitat based on location within

channel, patterns of water flow, and nature of flow controlling structures. Habitat is classified into a number of types according to location within the channel, patterns of water flow, and nature of flow controlling structure. Riffles are divided into three habitat types: low gradient riffles, rapids, and cascades. Pools are divided into seven types: secondary channel pools, backward pools, trench pools, plunge pools, lateral scour pools, dammed pools, and beaver ponds. Glides, the third habitat type, are intermediate in many characteristics between riffles and pools. It is recognized that as aquatic habitat types occur in various parts of the country, additional habitat types may have to be described. If necessary, the regional fishery biologist will describe and define the additional habitat types.

**arterial roads**—Roads that provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource-management service. They are usually developed and operated for long-term land and resource management purposes and constant service. These roads generally serve areas more than 40,000 acres.

**artificial regeneration (reproduction)**—Creation of a new age class by renewal of a tree crop by direct seeding, or by planting seedlings or cuttings.

**authorized use**—Specific activity or occupancy, including a ski area, historical marker, or oil and gas lease, for which a special authorization is issued.

## B

**background**—The area after the middleground in a picture or landscape; generally over 4 miles distance from the viewer.

**bald**—An early successional opening generally above 4,000 feet, characterized by grassy or heath vegetation.

**basal area**—The area of the cross-section of a tree inclusive of bark at breast height (4.5 feet or 1.37 meters above the ground) most commonly expressed as square feet per acre or square meters per hectare. Used to measure the density of a stand of trees. For shrubs and herbs it is used to determine phytomass. Grasses, forbs, and shrubs usually measured at or less than 1 inch above soil level. Trees—the cross-section area of a tree stem in square feet commonly measured at breast height (4.5' above ground) and inclusive of bark, usually computed by using diameter at breast height (DBH), or tallied through the use of basal area factor angle gauge.

**basal spray**—The application of a pesticide, usually a herbicide for controlling brush or weed trees, directed at the base of the stem.

**base sale schedule**—A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to, or greater than, the planned sale and harvest for the preceding decade. The planned sale and harvest for any decade must not be greater than the long-term sustained yield capacity.

**best management practices (BMP)**—A practice, or a combination of practices determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

**biodiversity**—The variety of life in an area, including the variety of gene pools, species, plant and animal communities, ecosystems, and the processes through which individual organisms interact with one another, and their environments.

**biological assessment**—A “biological evaluation” conducted for major federal construction projects requiring an environmental impact statement, in accordance with legal requirements under Section 7 of the Endangered Species Act (16 U.S.C. 1536(c)). The purpose of the assessment and resulting document is to determine whether the proposed action is likely to affect an endangered, threatened, or proposed species.

**biological evaluation** —A documented Forest Service review of its programs or activities in sufficient detail to determine how an action or proposed action may affect any proposed, endangered, threatened, or sensitive species.

**biological growth potential**—The average net growth attainable on a fully-stocked natural forest land.

**biological oxygen demand** —Dissolved oxygen required by organisms for the aerobic biochemical decomposition of organic matter present in water.

**bladed skid road**—A travel way through the woods formed by loggers to facilitate dragging (skidding) logs from the stump to a log landing. Skid roads are generally used in steep terrain and are cut into mountainsides with a bulldozer.

**board foot**—A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide. Commonly, 1,000 board feet is written as 1 MBF, and 1,000,000 board feet is written as 1MMBF.

**browse**—Young twigs, leaves and tender shoots of plants, shrubs or trees that animals eat.

**burning (prescribed)**—The application of fire, usually under existing stands and under specified conditions of weather and fuel moisture, in order to attain silvicultural or other management objectives.

## C

**cable logging**—A term for any system involving transport of logs along, or by means of steel cables with the load being lifted partly or wholly off the ground.

**canopy cover**—The percent of a fixed area covered by the crown of an individual plant species or delimited by the vertical projection of its outermost perimeter. Small openings in the crown are included. Used to express the relative importance of individual species within a vegetation community, or to express the canopy cover of woody species. Canopy cover may be used as a measure of land cover change or trend. Often used for wildlife habitat evaluations.

**capability**—The potential of a land area to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and a given level of management intensity. Note: capability depends upon the current condition and site conditions including climate, slope, land form, soil and geology, and the application of management practices and protection from fire, insects, and disease.

**carrying capacity**—The number of organisms of a given species and quality that can survive in, without causing deterioration of, a given ecosystem through the least favorable environmental conditions that occur within a stated interval of time.

**channel ephemeral streams**—Ephemeral streams that have a defined channel of flow where surface water converges with enough energy to remove soil, organic matter, and leaf litter. Ones that exhibit an ordinary high watermark and show signs of annual scour or sediment transport are considered navigable waters of the United States (USACE, Part 330-Nationwide Permit program, 2000).

**channelization**—Artificial change of a stream channel profile.

**Class A, B, C, and D Chemicals**—The Vegetation Management EISs (VMEIS) for both the Coastal Plain/Piedmont and for the Appalachian Mountains classified combinations of herbicides/application methods as Class A, B, C or D. Each VMEIS classifies these combinations of herbicides and application methods as follows:

**Class A**—Do not pose risk which would require mitigation in addition to those stated in chapter II (section E.2.c.) in the VMEIS.

**Class B**—Pose human or wildlife health risk which requires additional mitigation, OR have soil-active half-lives (appendix A, table 4-9 in the VMEIS) exceeding 6 months.

**Class C**—Pose human or wildlife health risk which requires additional mitigation, AND have soil-active half-lives (appendix A, table 4-9 in the VMEIS) exceeding 6 months.

**Class D**—Pose a risk to human or wildlife health or to the environment which cannot be mitigated to an acceptable level of risk.

**Clean Air Act of 1970**—A congressional act, along with the amendments passed in 1977 and 1990, that provides authority for the

Environmental Protection Agency to develop specific regulations controlling air pollution.

**cleaning**—A release treatment made in an age class, not past the sapling stage, in order to free the favored trees from less desirable individuals of the same age class which can overtop them.

**clearcutting**—The harvesting in one cut of all trees on an area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as a separate age class in planning for sustained yield under area regulation. A method of regenerating an even-aged stand. Regeneration is from natural seeding, direct seeding, planted seedlings, and/or advance reproduction. Harvesting may be done in groups or patches (group or patch clearcutting), or in strips (strip clearcutting). In the clearcutting system, the management unit or stand in which regeneration, growth, and yield are regulated consists of the individual clearcut stand.

**clearcutting with reserves**—A two-aged regeneration method in which varying numbers of reserve trees are not harvested to attain goals other than regeneration.

**climax**—The culminating stage in plant succession for a given environment with the vegetation having reached a highly stable condition.

**co-dominant trees**—Trees or shrubs with crowns receiving full light from above, but comparatively little from the sides. Crowns usually form the general level of the canopy.

**cohort**—a group of trees developing after a single disturbance, commonly consisting of trees of similar age, although it can include a considerable range of tree ages of seeding or sprout origin and trees that predate the disturbance.

**cold water fishery**—Aquatic habitats that predominately support fish species that have temperature tolerances up to about 70°F, and exhibit their greatest reproductive success at temperatures below 65°F (18.3°C).

**collector road**—Roads that serve smaller land areas and are usually connected to a forest arterial or public highway. They collect traffic from forest local roads or terminal facilities. The location and standard are influenced by long-term multi-resource service needs, and travel efficiency. Forest collector roads may be operated for constant or intermittent service, depending on land-use and resource management objectives for the area served by the facility. These roads generally have two or more local roads feeding into them and generally serve an area exceeding 10,000 acres.

**commercial forest land**—Forest land that can produce crops of industrial wood, and has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service. Existing technology and knowledge must be available to ensure timber production without irreversible damage to soils productivity, or watershed conditions. Adequate restocking can be attained within five years after final harvesting.

**commercial thinning**—Any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting.

**commercial tree species**—(1) Tree species suitable for industrial wood produces. (2) Conifer and hardwood species used to calculate the commercial forest land allowable sale quality.

**commodity outputs**—A resource output with commercial value. All resource products that are articles of commerce.

**compartment**—A portion of a forest under one ownership, usually contiguous and composed

of a variety of forest stand types, defined for purposes of locational reference.

**composition (stand)**—The proportion of each tree species in a stand expressed as a percentage of the total number, basal area, or volume of all tree species in the stand.

**constraint**—A restriction or limit that must be met.

**Continuous Inventory of Stand Condition (CISC)**—A system that continuously reflects an up-to-date description of timber stands. It tells what and when actions are planned for stands and gives some information about actions that have taken place. It is also the name of the data base management computer system used for the storage and retrieval of data.

**conventional logging**—A term used to identify methods commonly used in an area to move logs from stump to mill.

**conversion (forest management)**—A change from one forest type to another in a stand on land that has the capability of both forest types.

**coppice**—A method of regenerating a stand in which all trees in the previous stand are harvested and the majority of regeneration is from stump sprouts or root suckers.

**coppice with reserve**—A two-aged regeneration method in which reserve trees are retained to goals other than regeneration. This method normally creates a two-aged stand.

**cord**—A unit of gross volume measurement for stacked, round wood based on external dimensions, generally implies a stack of 4 x 4 feet vertical cross section and 8 feet long. Contains 128 stacked cubic feet.

**corridor**—A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.

It can also be identified for wildlife habitat connecting, or protecting forest resources.

**Council on Environmental Quality**—An advisory council to the president established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the president on environmental matters.

**creel survey**—A survey of anglers.

**critical habitat**—Habitat, determined by the Secretary of Interior, essential to the conservation of the endangered or threatened species.

**crown class**—A class of tree based on crown position relative to the crowns of adjacent trees.

**dominant**—Trees with crowns extending above the general level of the main canopy of even-aged groups of trees. They receive full light from above, and partly from the sides.

**co-dominant**—Trees with crowns forming the general level of the main canopy in even-aged groups of trees. They receive full light from above, and comparatively little from the sides.

**intermediate**—Trees with crowns extending into the lower portion of the main canopy of even-aged groups of trees, but shorter in height than the co-dominants. They receive little direct light from above, and none from the sides.

**culmination of mean annual increment**

—Age at which average rate of annual tree growth stops increasing and begins to decline. Mean annual increment is expressed in cubic feet measure and is based on expected growth, according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields, and any additional yields from planned intermediate harvests.

**cultural resources**—Physical remains of districts, sites, structures, buildings, networks or objects that were used by humans. They may be historic, prehistoric, archaeological or architectural or spiritual in nature. Cultural resources are non-renewable.

**cunit**—Equivalent to 100 cubic feet of solid wood. Commonly, 100 cubic feet is expressed as 1 CCF.

**cut-offs**—Analysis constraints that prevent the valuation of non-timber outputs produced in excess of demand plus x percent. It ensures that the assumptions of a horizontal demand curve are not violated.

**cutting cycle**—The planned interval between partial harvest in a stand being managed with an uneven-aged regeneration method.

## D

**daylighting**—The practices of cutting back edges of roads or trails by removing shrub and tree growth.

**desired future condition**—An expression of resource goals that have been set for a unit of land. It is written as a narrative description of the landscape as it will appear when the goals have been achieved. The condition also includes a description of physical and biological processes, the environmental setting, and the human experience.

**developed recreation**—Recreation use or opportunities occurring at developed sites.

**developed recreation site**—A discrete place containing a concentration of facilities and services used to provide recreation opportunities to the public and evidencing a significant investment in facilities and management under the direction of an administrative unit in the National Forest System.

**development level**—An indication of site modification based on classes in the Recreation Opportunity Spectrum. Development Level 1 equates to Primitive, with minimum site modification; 2 equates to Semi-Primitive Motorized/Nonmotorized, with little site modification; 3 equates to Roaded, with moderate modification; 4 equates to Rural, with heavy site modification; and 5 relates to Urban, with a high degree of site modification.

**diameter at breast height**—A tree's diameter measured at about 4.5 feet (1.37m) above the forest floor on the uphill side of the tree. For the purposes of determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

**diameter class**—Any of the intervals into which a range of diameters of tree stems may be divided for classification and use, (e.g., 10-inch class includes diameters from 9.5 inches to 10.49 inches.

**disjunct (species)**—Separated; plant or animal populations occupying sites away from their normal range, or away from other sites of occurrence.

**dispersed recreation**—Recreation opportunities or use occurring in the general forest area. Does not take place in developed sites.

**disturbance (ecology)**—Any relative discrete event in time that disrupts the ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.

**disturbance-recovery regime**—A natural pattern of periodic disturbance followed by a period of recovery. Examples include fire or flooding.

**diversity**—The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

**drainage area/basin**—The total area above a given point on a stream that contributes to the flow at that point. Term is often used interchangeably with watershed.

**drum chopping**—Method used to prepare areas for reforestation. Large drums with cutting blades attached are pulled over areas by vehicles that include crawler-type tractors and rubber-tired skidders.

## E

**early succession forest**—The biotic community that develops immediately following the removal or mortality of most or all of forest canopy, resulting in a predominance of woody species regeneration. As used in the Final Environmental Impact Statement and Forest Plan, a stand age of 0 to

10 years is used to define this condition. See successional stage.

**early successional habitat**—A vegetative condition typically characterized by low density to no tree canopy cover and an abundance of herbaceous and/or woody ground cover. This condition may include early-successional forest, maintained openings, pastures, balds, and open woodlands.

**early successional species**—Plant or animal species characteristic of early forest successional stages.

**ecological classification system**—A hierarchical system used to help organize and coordinate the classification of ecological types, units, and to make comparisons. Classification is ecologically based and integrates existing resource data including climate, topography, geology, soil, hydrology, and vegetation. The system includes many levels (from the top-down approach): domain, division, province, section, subsection, land type, land type association, land type phase, and site.

**ecological management unit**—A grouping of one or more soil series that have similar characteristics including texture, structure, or water retention capacity. EMUs are used in soil mapping.

**ecosystem**—A complete interacting system of organisms and their environment.

**ecosystem/cover type**—The native vegetation ecological community considered together with non-living factors of the environment as a unit. The general cover type occupying the greatest percent of the stand location. Based on tree or plant species forming a plurality of the stocking within the stand. May be observed in the field,

receives radio signals.

**endangered species**—Any species that is in danger of extinction throughout all or a significant portion of its range, other than members of the class Insecta that have been determined by the Department of Interior to constitute a pest whose protection under the provisions of this (Endangered Species Act of 1973) act would present an overwhelming and overriding risk to humans. It must be designated in the *Federal Register* by the appropriate secretary.

**Endangered Species Act of 1973**—An act that enables endangered and threatened species to be conserved. It provides a program for the conservation of such species, and takes appropriate steps to achieve the purposes of the (relevant) treaties and conventions.

**endemic**—Species restricted to a particular geographic area. Usually limited to one or a few small streams or a single drainage.

**ending inventory**—The standing volume at the end of the planning horizon. It must be adequate for the maintenance of long-term sustained yield.

**environment**—All the conditions, circumstances, and influences surrounding and affecting the development of an organism, or group of organisms.

**environmental consequence**—The result or effect of an action upon the environment.

#### **Environmental Impact Statement**

—A disclosure document revealing the environmental effects of a proposed action, which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the

major federal actions under Section 102 of the National Environmental Policy Act.

**environmental impact**—Used interchangeably with environmental consequence or effect.

**ephemeral streams**—Streams having flows that occur for short periods of time in direct response to storm precipitation or snowmelt runoff. Their bottoms are always above the water table and do not contain fish or aquatic insects that have larvae with multiple-year life cycles. Ephemeral streams may have a defined channel, but may be manifested as a natural swale or depression with vegetation and organic material covering the bottom. They also may serve as a conduit for much of the sediment that enters the stream system. Large woody debris associated with ephemeral streams may also contribute significantly to the stability of a stream system. Ephemeral streams that exhibit an ordinary high watermark, show signs of annual scour or sediment transport, are considered navigable waters of the United States.

**erosion**—The wearing away of the land surface by the action of wind, water, or gravity.

**essential habitat**—Habitat in which threatened and endangered species occur, but which has not been declared as critical habitat. Occupied habitat or suitable unoccupied habitat necessary for the protection and recovery of a federally designated threatened or endangered species.

**eutrophication**—Condition of a lake where deleterious effects are caused by increased nutrients (nitrogen and phosphorous), and a decrease in oxygen.

**evapo-transpiration**—The transfer of water vapor to the atmosphere from soil and water surfaces (evaporation), and from living plant cells (transpiration).

**even-aged silvicultural system**—A planned sequence of treatments designed to maintain and regenerate a stand with one age class.

**even-aged stand**—A stand of trees containing a single age class in which the range of tree ages is usually less than 20 percent of rotation.

**existing old growth**—Individual stands currently recognized by the FS as meeting the parameters for existing old growth as described in the "Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region"

**extirpation**—Extinction of a species from all or part of its range.

## F

**farmer-owned land**—Owned by farm operators, excluding incorporated farm ownerships.

**fauna**—The animals of a given region or period.

**featured species**—The selected wildlife species whose habitat requirements guide wildlife management including coordination, multiple use planning, direct habitat improvements, and cooperative programs for a unit of land. In context of land management planning, featured species are similar to management indicator species.

**Federal Register**—The designated document that notifies the public of federal actions and includes Notice of Intent, calls for public involvement, etc. It also publishes the regulations needed to implement those federal actions.

**felling**—The cutting down of trees

**rare species**—Any native or once-native species of wild animal which exists in small numbers, and has been determined to need monitoring. May include peripheral species.

**real dollar value**—A monetary value, which compensates for the effects of inflation.

**receipt shares**—The portion of receipts derived from Forest Service resource management that is distributed to state and county governments, including the Forest Service, 25 percent fund payments.

**reconstruction**—Work that includes, but is not limited to, widening of roads, improving alignment, providing additional turnouts, and improving sight distance that improve the standard to which the road was originally constructed. Also undertaken to increase the capacity of the road or to provide greater traffic safety.

**Record of Decision**—A document separate from, but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the alternative assessed in the environmental impact statement chosen to implement.

**recreation**—Leisure time activity including swimming, picnicking, camping, boating, hiking, hunting, and fishing.

**recreation capacity**—A measure of the number of people a site can reasonably accommodate at one time; sometimes measured as PAOTs.

**recreation alignment**—To align or allocate the recreation resources (activities and opportunities) of an area with the niche and markets of the that area.

**Recreation Opportunity Spectrum**—A method for classifying types of recreation experiences available, or for specifying recreation experience objectives desired in

certain areas. Classes are: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban.

- **Primitive ROS**—An area characterized by having essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.

The recreation experience opportunity level provided would be characterized by the extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsmen and outdoor skills in an environment that offers a high degree of challenge and risk.

- **Semi-Primitive Non-Motorized (ROS)**—An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle.

The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsmen and outdoor skills in an environment that offers challenge and risk. (The opportunity to have a high degree of interaction with

the natural environment.) Motorized use is not permitted.

- **Semi-Primitive Motorized (ROS)**—An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle.  
The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. (The opportunity to have a high degree of interaction with the natural environment.) Motorized use is permitted.
- **Roaded Natural (ROS)**—An area characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment.  
Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.  
The recreation opportunity experience level provided would be characterized by the probability for equal experiencing of affiliation with individuals and groups and for isolation from sights

and sounds of humans. Opportunities for both motorized and non-motorized forms of recreation may be provided.

- **Rural (ROS)**—A classification for areas characterized by a substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil, but harmonize with the natural environment. A considerable number of facilities are designed for use by a large number of people. Moderate densities are provided away from developed sites. Facilities for intensified motorized use and parking are provided.  
The recreation opportunity experience level provided would be characterized by the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting. Opportunities for wildland challenge, risk taking, and testing of outdoor skills are generally unimportant.
- **Urban (ROS)**—An area characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resources modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sound of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry

people throughout the site.

The recreation opportunity experience level provided would be characterized by the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risk afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

**recreation visit**—The entry of one person upon a National Forest to participate in recreation activities for an unspecified period of time. A NF visit can be composed of multiple site visits.

**reforestation** —The re-establishment of forest cover by seeding, planting, and natural means.

**regeneration**— The act of renewing of a tree crop by establishing young trees by naturally or artificially. The young crop itself.

**regeneration cutting**—Any removal of trees intended to assist regeneration already present or to make regeneration possible.

**regeneration (reproduction) method**—A cutting procedure by which a new age class is created. The major methods are clearcutting, seed-tree, shelterwood, selection, and coppice.

**regeneration (reproduction) period**—The time between the initial regeneration cutting and the successful re-establishment of a new age class by natural means, planting, or direct seeding.

**Region 8**—The states that make up the Southern Region of the USDA Forest Service.

**Regional Forester**—The official responsible for management of National Forest land within a USDA Forest Service region.

**regulated harvest**—Includes any volume scheduled in calculations of the allowable sale quantity which is harvested from suitable forest land.

**release and weeding**—A silvicultural treatment designed to free desirable trees from competition with overstory trees, less desirable trees, or grasses and other forms of vegetative growth. It includes release of natural and artificial regeneration.

**relic (species)**— An isolated species from an ancient family as established through a long fossil record and exhibiting a restricted distribution.

**removal cut**—The cut which removes the last seed bearers of a seed tree or shelterwood regeneration method after the new seedling stand is considered to be established.

**research natural area**—An area set aside by the Forest Service specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

**reserve trees**—Trees, pole-sized or larger, retained after the regeneration period under the clearcutting, seed-tree, shelterwood, or coppice methods.

**reserved mineral rights**—Refers to those cases wherein the minerals were severed from the surface during the transaction whereby the government acquired the land. These rights are subject to the Secretary of Agriculture's rules and regulations that were applicable at the time

of the transaction.

**resource**—An aspect of human environment which renders possible, or facilitates the satisfaction of, human wants, and the attainment of social objectives.

**resource allocation model**—A mathematical model using linear programming that will allocate land to prescriptions and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and allocation that meets the goals of the forest and optimizes some objective function including minimizing costs. The model used for this planning is called spectrum.

#### **resource use and development**

**opportunities**—A possible action, measure, or treatment and corresponding goods and services identified and introduced during the scoping process. It may subsequently be incorporated into and addressed by the land and resource management plan in terms of a management prescription.

**responsible line officer**—The Forest Service employee who has the authority to select and/or carry out a specific planning action.

**retention**—A visual quality objective in which man's activities are not evident to the casual forest visitor.

**revegetation**—The re-establishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of humans (e.g., afforestation and range reseeding).

**revision**—To make the plan new or up-to-date. Plan revision must be considered and approved in accordance with the requirements for the development and approval of a forest plan. Revisions take place every 10-15 years,

but may occur more frequently if conditions or public demands change significantly.

**right-of-way**—A right of use across the lands of others. It generally does not apply to absolute purchase of ownership. Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under, or through such land.

**riparian**—Land areas directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamside, lake borders, and marshes are typical riparian areas.

**riparian areas**—Areas with three-dimensional ecotones of interaction that include terrestrial and aquatic ecosystems that extend down into the groundwater, up above the canopy, outward across the floodplain, up the near-slopes that drain to the water, laterally into the terrestrial ecosystem, and along the watercourse at a variable width.

**riparian corridor**—An administrative zone applied to both sides of a stream or along side a pond, lake, wetland, seep or spring. It is a fixed width by stream type that may fall within or beyond the true riparian area.

**riparian functions**—Activities that occur in a riparian area without the influence of management activities. Functions include erosion and deposition by the streams, nutrient cycling, movement and storage of water, vegetative succession, etc.

**ripping**—A process where the soil is mechanically sliced or broken to improve tilth, aeration, and permeability.

#### **river classifications (wild and scenic rivers)**

(1) **wild** — Rivers or sections of rivers that are free of impoundments and generally inaccessible except by

trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) **scenic** — Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) **recreational** — Rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

**road**—A motor vehicle path more than 50 inches wide, unless classified and managed as a trail. It may be classed as a system or non-system road.

**road-constant service**—A facility on the transportation system developed and operated for long-term land management and resource utilization needs. It is also operated for continuous or annual recurrent service. System-open roads generally remain open for public use except for seasonal closures to prevent road damage due to bad weather conditions.

**road—intermittent service**—A facility on the transportation system that is developed and operated for long-term land management and resource utilization needs. It is operated for periodic service and closed for more than one year between periods of use. System-closed roads are generally built to access logging sites and are closed once logging activities are completed. They can be re-opened several years later, however, when access is once again needed to the site.

**road closure**—A technique used by management to regulate and control the use of facilities to achieve transportation economy,

user safety, protection of the public investment, and accomplishment of forest resource objectives. It may be intermittent or long term.

**road density**—A measure of the total length of road in any given unit of area (e.g., 4 miles/square mile.)

**road maintenance levels**—A formally established set of objectives that describes the conditions necessary to achieve the planned operation of a road. The levels vary from Level I, basic custodial care, to Level V, which is assigned high use roads in which user safety and comfort are important considerations.

**roadless area**—Undeveloped federal land within which there are no improved roads or roads maintained for travel by means of motorized vehicles intended for highway use.

**roadless area review and evaluation (RARE) II**—The assessment of “primitive” areas within the national forests as potential wilderness areas as required by the Wilderness Act documented in the final environmental impact statement of the Roadless Area Review and Evaluation, January 1979.

**rollover**—A maximum PNV solution with an individual good or service production constrained at its maximum potential level. It provides an economically efficient basis for comparing all benchmark levels.

**rotation**—The number of years required to establish, including the regeneration period and grow timber crops, to a specified condition or maturity for harvest. Even- and two-aged management prescriptions in the Forest Plan use a rotation.

**roundwood**—Timber and fuelwood prepared in the round state - from felled trees to material trimmed, barked, and crosscut (e.g.: logs and transmission poles).

**RPA Program**—The recommended direction for long-range management of renewable resources of National Forest System lands. This direction serves as the basis for the regional targets assigned to the forest. The development of this direction is required by the Forest and Rangeland Renewable Resources Planning Act.

**runoff**—The total stream discharge of water from a watershed including surface and subsurface flow, but not groundwater. Usually expressed in acre-feet.

**rural**—A recreation opportunity spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

**rural water use**—Term used in previous water-use circulars to describe water used in suburban or farm areas for domestic and livestock needs. The water is generally self-supplied.

## S

**sale schedule**—The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period (usually a decade) of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.

**sanitation cutting**—The removal of trees to improve stand health and to reduce actual or anticipated spread of insects and disease.

**sapling**—A usually young tree that is larger than a seedling, but smaller than a pole. Size varies by region.

**savanna**—A plant community with a structure characterized by trees comprising 10-25 percent of the canopy cover.

**sawtimber**—Trees suitable in size and quality for producing logs that can be processed into dimension lumber.

**scallop**—The undulating vegetative treatment given to a roadside for aesthetic purposes.

**Scenery Management System**—A system for the inventory and analysis of the aesthetic values of the National Forest Lands. It replaces the Visual Management System (VMS) as defined in Agricultural Handbook #462. The primary components of the SMS include: Landscape Character, Scenic Attractiveness, Existing Scenic Integrity, Concern Levels, Seen Areas, Scenic Classes, which are developed in the inventory. The Forest Plan components are Landscape Character Goals, Scenic Integrity Levels, Scenic Integrity Objectives, and Standards and Guidelines. These give management direction for the management areas.

National Forest land area is mapped as ecological sections or subsections but may be other land units. Landscape Character descriptions are developed for mapping Scenic Attractiveness, Class A-Distinctive, B-Typical, and C-Indistinctive areas. These help determine the high priority scenic areas. Existing Scenic Integrity Levels indicate the degree of intactness and wholeness of the existing landscape character. Very High Scenic Integrity Level is an unaltered landscape, High Scenic Integrity Level is a landscape that appears unaltered, Moderate Scenic Integrity Level is a landscape that is slightly altered, Low Scenic Integrity Level is a landscape that is moderately altered, Very Low Scenic Integrity Level is a landscape that is heavily altered, and Unacceptably Low Scenic Integrity Level is a landscape that is extremely altered.

Concern Levels are a measure of the degree of public importance placed on the landscape viewed from travel ways and use areas. Concern Levels reflect both the number of visitors and the interest of visitors in scenery. Concern Level 1 areas include primary recreation areas, very high use roadways, major roadways and trails through the forest, and places with moderate use where nearly all visitors are very concerned about scenery. Concern Level 2 areas include mostly secondary recreation areas, secondary roadways, trails, and places with moderate use and visitors with moderate interest in scenery. Concern level 3 travel ways and areas are those which receive very little use and/or use is primarily by visitors not concerned with scenery.

After Concern Levels are determined, the visibility of each area is mapped. Foreground is defined as up to ½ mile from the viewer, Middleground is ½ mile to 4 miles, and Background is over 4 miles from the viewer. The Seldom Seen areas are also mapped.

Scenic Classes are determined by overlaying Scenic Attractiveness, Landscape Visibility, and Concern Level. The matrix in Table 4-2 page 4-16 from the SMS handbook is used. Scenic Class 1 scenery has extremely high public value, Scenic Class 2 scenery has very high public value, Scenic Class 3 scenery has high public value, Scenic Class 4 scenery has moderately high public value, Scenic Class 5 scenery has moderate public value, Scenic Class 6 scenery has moderately low public value, and Scenic Class 7 scenery has low public value. The Scenic Classes are used during the Forest planning process to compare the value of scenery to other resources.

Scenic Integrity Objectives (SIOs) and Landscape Character Goals are developed for Forest Plan Management Areas. Scenic Integrity Objectives are Very High-unaltered, High-appears unaltered, Moderate-slightly altered, and Low-moderately altered. The SIO that is assigned to a management area in the Forest Plan may be different than that of its existing Scenic Integrity Level indicating that any new

**scenic attractiveness**—The scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rockform, waterform, and vegetation pattern. Classified as A (Distinctive), B (Typical or Common), or C (Undistinguished).

**scenic class**—A system of classification describing the importance or value of a particular landscape or portions of that landscape. Values range from 1 (highest value) to 7 (lowest value).

**scenic integrity objective**—A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include very high, high, moderate, and low.

- **very high (VH)**—Generally provides for only ecological changes in natural landscapes and complete intactness of landscape character in cultural landscapes.
- **high (H)**—Human activities are not visually evident to the casual observer. Activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.
- **moderate (M)**—Landscapes appear slightly altered. Noticeable human created deviations must remain visually subordinate to the landscape character being viewed.
- **low (L)**—Landscapes appear moderately altered. Human created deviations begin to dominate the valued landscape character being viewed but borrow from valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed.

**scoured channel**—A definable channel of flow where surface water converges with enough energy to remove soil, organic matter, and leaf litter.

**secondary processor**—A mill that processes partially manufactured wood (a wood product such as chips or lumber), into a finished product. Examples include paper and furniture.

**secondary trout streams**—Streams that do not contain naturally-reproducing trout populations, but will sustain trout throughout the year. Populations must be maintained by stocking.

**sediment**—Solid mineral and organic material that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice.

**seedling/sapling stands**—Stands at least 16.7 percent stocked with growing stock trees, of which more than one-half of total stocking is seedlings and saplings.

**seed tree**—An even-aged regeneration method where in a single cut, the removal of all merchantable trees in a stand, except for a small number of widely dispersed trees retained for seed production, and to produce a new age class in a fully-exposed microenvironment.

**seed-tree with reserves method**—A two-aged regeneration method in which some or all of the seed trees are retained after regeneration has become established to attain goals other than regeneration.

**seep**—A wet area where a seasonal high water table intersects with the ground surface. Seeps that meet the definition of a wetland are included in the Riparian Corridor.

**selected species**—Species selected as indicators of the effects of management. Term is the same as management indicator species.

**selection cutting**—The removal of selected trees, particularly mature trees at planned intervals (cutting cycle), individually or in small groups, from an uneven-aged forest to realize the yield, and establish a new crop of desired tree species. Additionally, the tending of immature stand components are accomplished at each cutting cycle.

**sensitive species**—Those species that (1) have appeared in the *Federal Register* as proposals for classification, and are under consideration for official listing as endangered or threatened species; (2) are on an official state list, or (3) are recognized by the Regional Forester to need special management to prevent the need for their placement on federal or state lists.

**sensitivity analysis**—A determination of the consequences of varying the level of one or several factors while holding other factors constant.

**sensitivity level**—A particular degree or measure of viewer interest in the scenic qualities of the landscape.

**sequential lower bounds**—The maximum percent decrease in harvest volume in any decade as compared to the preceding decade. This prevents the forest from significantly decreasing its share of the market, which would violate the assumptions of the horizontal demand curve.

**sequential upper bounds**—The maximum percent increase in harvest volume in any decade as compared to the preceding decade. This prevents the forest from significantly increasing its share of the market, which would violate the assumptions of the horizontal demand curve.

**shearing**—A method used in land clearing whereby tree stems are severed at ground line by large bladed mechanisms mounted on

crawler tractors (e.g.: serrated tooth V-blade or KG blade).

**shelterwood**—A regeneration method of regenerating an even-aged stand in which a new age class develops beneath the partially shaped microenvironment provided by the residual trees. The sequence of treatments can include three distinct types of cuttings: (1) an optional preparatory harvest to enhance conditions for seed production; (2) an establishment harvest to prepare the seed bed, and to create a new age class; and 3) a removal harvest to release established regeneration from competition with the overwood.

**shelterwood with reserves**—A two-aged regeneration method in which some or all of the shelter trees are retained, well beyond the normal period of retention, to attain goals other than regeneration.

**short-term facilities**—Facilities developed and operated for limited resource activity or other project needs. It will cease to exist as a transportation facility after the purpose for which it was constructed is completed, and the occupied land is reclaimed and managed for natural resource purposes.

**silvicultural system**—A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop, and provide for regeneration and according to the type of forest thereby produced.

**silviculture**—The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

**silvics**—The study of the life history and general characteristics of forest trees and stands, with particular reference to environmental factors, as a basis for the practice of silviculture.

**single-tree selection**—A regeneration method of creating new age classes in uneven-aged stands in which individual trees of all size classes are removed uniformly throughout the stand to achieve desired stand structural characteristics.

**site**—An area in which a plant or stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can carry

**site class**—A classification of site quality, usually expressed in terms of ranges of dominant tree height at a given age or potential mean annual increment at culmination.

**site preparation**—The preparation of the ground surface prior to reforestation. Various treatments are applied as needed to control vegetation that will interfere with the establishment of the new crop of trees or to expose the mineral soil sufficiently for the establishment of the species to be reproduced.

**site index**—A series-specific measure of actual or potential forest productivity (site quality, usually for even-aged stands), expressed in terms of the average height of trees included in a specified stand component (defined as a certain number of dominants, codominants, or the largest and tallest trees per unit area) at a specified index or base age.

**site productivity class**—A species-specific classification of forest land in terms of inherent capacity to grow crops of industrial, commercial wood. Usually derived from the site index.

**site quality (productivity)**—The productive capacity of a site, usually expressed as volume production of a given species.

**skid trails**—A travel way through the woods formed by loggers dragging (skidding) logs from the stump to a log landing without dropping a blade and without purposefully changing the geometric configuration of the ground over which they travel.

**skidding**—A term for moving logs by dragging from stump to roadside, deck, or other landing.

**slash**—The residue left on the ground after felling, silvicultural operations, or as a result of storm, fire, girdling, or poisoning. All vegetative debris resulting from the purchaser's operations. Slash associated with construction of roads is subject to treatment according to construction specifications, all other is subject to the terms of contract provision B/BT6.7.

**snag**—A dead or partially dead (more than 50 percent) hardwood or pine tree which is used by many bird species for perching, feeding, or nesting.

**social analysis**—An analysis of the social (as distinct from the economic and environmental) effects of a given plan or proposal for action. It includes identification and evaluation of all pertinent desirable and undesirable consequences to all segments of society, stated in some comparable quantitative terms, including persons or percent of population in each affected social segment. In addition, social analysis also includes a subjective analysis of social factors not expressible in quantitative terms.

**soil enhancement**—Application of methods or materials to the soil to increase its productivity and stimulate growth of vegetation.

**soil productivity**—The inherent capacity of a soil to support the growth of specified

plants, plant communities, or a sequence of plant communities. Soil productivity may be expressed in terms of volume or weight/unit area/year, percent plant cover, or other measures of biomass accumulation.

**soil survey**—A term for the systematic examination of soils in the field and in laboratories; their description and classification; the mapping of kinds of soil; the interpretation of soils according to their adaptability for various crops, grasses, and trees; their behavior under use of treatment for plant production or for other purposes; and their productivity under different management systems.

**soil and water resource improvement**—The application of preplanned treatment measures designed to favorably change conditions of water flow, water quality, rates of soil erosion, and enhancement of soil productivity.

**southern pine beetle**—One of the many species of pine bark beetles that are present in the forest at all times. When environmental and forest conditions become favorable, the beetle populations can increase and cause substantial timber losses over extensive areas in a relatively short period of time.

**spatial feasibility testing**—A process for verifying on a sample basis that land allocation and scheduling is actually implementable on the ground.

**special concern species**—Species that is federally listed as Category 2 or ranked as globally rare by state heritage programs and The Nature Conservancy. Also used by some states for any species of wild animal native or once-native to the state which is determined by the state to require monitoring.

**special-use authorization**—A permit, term permit, or easement that allows occupancy, use, rights, or privileges of National Forest System land.

**special use permit**—A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

**splash dams**—Dams, usually temporary, built of wood across mountain streams to pond up large amounts of water.

**spring**—A water source located where water begins to flow from the ground due to the intersection of the water table with the ground surface. Generally flows throughout the year. Springs that are the source of perennial or intermittent streams are included in the Riparian Corridor.

**stand**—A contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

**stand density**—A quantitative measure of stocking expressed either absolutely per unit of land in terms of number of trees, basal area, volume per unit area, or relative to some standard condition.

**stand improvement**—A term comprising all intermediate cuttings made to improve the composition, structure, condition, health, and growth of even-aged, two-aged, or uneven-aged stands.

**standard**—Requirement that precludes or imposes limitations on resource management practices and uses. Usually for resource protection, public safety, or addressing an issue.

**state, county, and municipal land**—Land owned by states, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

**stocking**—The degree of occupancy of land by

growing stock trees, measured by basal area or number of trees per unit area and spacing compared with a minimum standard—which varies by tree size and species or species group—to the occupancy that is required to fully utilize the growth potential of the land.

**stratified mixture**—A stand in which different tree species occupy different strata of the total crown canopy.

**stratigraphic**—Pertaining to strata or layers, as in a description of layers of rock types.

**stratum (canopy layer)**—A distinct layer of vegetation within a forest community.

**Streamside Management Zones**—Land areas adjacent to natural streams, lakes, ponds, and seeps. These zones are typically designed to reduce, minimize or prevent non-point source pollution from entering a stream system (e.g., sediment from a road or timber harvesting activity). Specific SMZ buffer widths are often defined in State Best Management Practice handbooks.

**stressors**—Pressure or change brought upon an ecosystem by pollution sources including sediment, contaminants, and toxins.

**successional stage**—A period marked by distinctiveness of structure, in the development of a forest community from establishment of tree regeneration to advanced age. In general, successional stages used in the Forest Plan and Final Environmental Impact Statement are defined in terms of forest age as a surrogate measure of the distance structure at each stage as follows.

- **early**—0 to 10 years old
- **seedling/sapling**—11 to approximately 40 years old
- **mid**—approximately 41 to 80 years old
- **late**—over approximately 80 years old; includes old growth.

**suitability**—The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

**suitable forest land**—National Forest System land allocated by a Forest Plan decision to be managed for timber production on a regulated basis. *Regulated basis* means a systematic relationship between tree growth and timber harvest such that a specific timber volume objective level can be sustained indefinitely.

**supply**—The amount of a good or service that producers are willing to provide at a specified price, time period, and conditions of sale.

**surficial water**—Water on or at the ground surface. Does not include ditches, canals, spillways, or other human-created flow channels.

**sustained yield of the products and services**—The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land.

**sympatric**—Condition where two or more closely related species live together in the same section of stream. The species have overlapping distributions. Opposite of allopatric.

## T

**targets**—Objectives assigned to the forest by the Regional Plan.

**taxomic**—Classification of organisms into categories according to their natural relationships.

**tentatively suitable forest land**—National

Forest System land that meets specific criteria in the implementing regulations of the National Forest Management Act (36 CFR 219.14 for further consideration during the planning process for timber production on a regulated basis. Note that “tentatively suitable land” is not the same as the allocation of the existing Forest Plan, as amended since 1985, but is identified by a reanalysis. (Also called “Phase 1 suitability” or “Stage 1 suitability” because its designation as Part “A” of a three-part process described by the text of the National Forest Management Act.) (Timber Supply/Demand).

**term permit**—A special-use authorization to occupy and use National Forest System land, other than rights-of-way, for a specified period. It is revocable and compensable according to its terms.

**theming**—A land and/or management scheme created with the list of land and/or management.

**thermoelectric power water use**—Water used in the process of the generation of thermoelectric power.

**thinning**—A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, or to recover potential mortality.

**thinning interval**—The period of time between successive thinning entries, usually used in connection with even-aged stands.

**threatened species**—Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Designated as a threatened species in the *Federal Register* by the Secretary of Interior.

**tiering**—A National Environmental Policy Act term used to reference the coverage of general matters in broader environmental impact statements (including national program

or policy statements), with subsequent narrower statements or environmental analyses (including regional or basinwide program statements or ultimately site-specific statements), incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

**timber**—Wood retaining many of the recognizable characteristics of a tree: round, bark covered, and tapering, but without the limbs and leaves. In wood-industry usage, it may be “standing timber”—that portion of living trees with characteristics of value to the wood-using industry, or cut trees not yet processed beyond removing limbs and tops.

**timber demand**—A relationship between stumpage or delivered log price and the quantity of timber produced.

**timber product market area**—The geographic area enclosed within a polygon drawn by connecting those mills buying forest timber that are the farthest away from the forest.

**timber production**—The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of forest planning, timber production does not include the production of fuelwood or harvests from unsuitable lands.

**timber removals (drain)**—The merchantable volume of trees removed from the inventory by harvesting, cultural operations including stand improvement, land clearing, or changes in land use expressed as an annual average between surveys. Within national forests, removals are almost all timber harvest except that the inventory on lands withdrawn by legislative action is also normally accounted for as “removals.”

**timber sale program quantity**—The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume), and any additional material (non-chargeable volume), planned for sale. The timber sale program quantity is usually expressed as an annual average for the first decade.

**timber stand improvement**—A term comprising all intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand.

**timber supply**—The amount of wood raw material available to be harvested within specified parameters of time and geographic area.

**timberland**—Forest land that is producing or capable of producing in excess of 20 cubic feet per acre per year of industrial wood crops under natural conditions. Not withdrawn from timber utilization, and not associated with urban or rural development. Currently, inaccessible and inoperable areas are included.

**tolerance**—The ability of a tree to grow satisfactorily in the shade of, and in competition with, other trees.

**topography**—The configuration of a land surface including its relief, elevation, and the position of its natural and human-made features.

**toxicity index profile**—Estimate of cumulative potential for toxic impacts in water.

**trailheads**—The parking, signing, and other facilities available at the terminus of a trail.

**traffic service levels**—Describe a road's significant traffic characteristics and operating conditions.

**transfer age**—The age a stand will transfer from one Model 2 management class to another.

**transfer class**—A Model 2 management class that receives transferred acres. A regeneration transfer class has a transfer age of zero. All other transfer classes have an age greater than zero.

**transfer columns**—A column constructed the matrix generator to create special LP structures. They accumulate information from several decision variables into one column.

**two-aged silvicultural system**—A planned sequence of treatments designed to maintain and regenerate a stand with two age classes.

**two-aged stand**—A stand composed of two distinct age classes that are separated in age by more than 20 percent of rotation.

**type conversion**—A change from tree species or species group to another. An example is a change from hardwoods to pine.

## U

**undercutting (root pruning)**—The root pruning of seedlings in a nursery bed.

**understory**—The trees and other vegetation growing under a more or less continuous cover of branches and foliage formed collectively by the upper portion (overstory) of adjacent trees and other woody growth.

**uneven-aged regeneration methods**—Methods of regenerating a forest stand, and maintaining an uneven-aged structure by removing some trees in all size classes either singly, in small groups, or strips. The methods are single-tree or group selection.

**uneven-aged silvicultural system**—A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes.

**universal soil loss equation**—An equation used to estimate soil erosion rates and for the design of water erosion control systems.  $A = RKLSPC$  wherein  $A$  = average annual soil loss in tons per acre per year;  $R$  = rainfall factor;  $K$  = soil erodibility factor,  $L$  = length of slope;  $S$  = percent of slope;  $P$  = conservation practice factor; and  $C$  = cropping and management factor.

**unregulated forest**—Commercial forest land that will not be organized for timber production under sustained-yield principles.

**unsuitable forest land (not suited)**—Forest land not managed for timber production because: (a) Congress, the Secretary [of Agriculture], or the Chief [of the Forest Service] has withdrawn it; (b) it is not producing or capable of producing crops of industrial wood; (c) technology is not available to prevent irreversible damage to soils productivity, or watershed conditions; (d) there is no reasonable assurance based on existing technology and knowledge, that it is possible to restock lands within five years after final harvest, as reflected in current research and experience; (e) there is, at present, a lack of adequate information about responses to timber management activities; or (f) timber management is inconsistent with, or not cost efficient in meeting the management requirements and multiple-use objectives specified in the Forest Plan.

**urban**—An area characterized by a substantially urbanized environment. The background may have natural-appearing elements.

**utilization standards**—Measurements for standing trees that describe the minimum size tree that will be designated for sale for various products including sawtimber or small roundwood.

# V

**values, market**—Prices of market goods and services measured in real dollars in terms of what people are willing to pay as evidenced by market transactions.

**values, non-market**—Prices of non-market goods and services imputed from other economic values.

**vector**—A matrix composed of only one row or column.

**viable population**—Population of plants or animals that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area.

**viewshed**—The total landscape seen, or potentially seen from all or a logical part of a travel route, use area, or water body.

**visual quality objective**—A desired level of excellence based on physical and sociological characteristics of an area under the Visual Management System. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include Preservation, Retention, Partial Retention, Modification, and Maximum Modification. The Visual Management System (VMS) as defined in Agricultural Handbook #462 and was replaced by the Scenery Management System.

**visual resource**—The composite of basic terrain, geological features, water features, vegetative patterns, and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

# W

**warm water fishery**—Aquatic habitats that support fish species which have their best reproductive success and summer water temperature tolerance between 75 and 85 degrees Fahrenheit (23-29 C), or about 80 degrees Fahrenheit. Examples include sunfish species, and largemouth bass.

**water supply area**—Areas that serve present and future municipal water supply and trout hatching or rearing operations.

**water yield**—The measured output of the forest's streams expressed in acre-feet. The amount or volume of water that flows in a given period of time from a watershed.

**waterbars**—A change in the grade of a roadbed, trail surface, or fire line used to divert water off the surface to prevent it from eroding ruts and possibly carrying sediment to a stream.

**watershed**—The total area above a given point on a stream that contributes water to the flow at that point.

**Weeks Act**—Implemented in 1911, it authorized the acquisition of lands on the watershed of navigable streams for the purposes of conserving their navigability, or for the purpose of timber.

**wetlands**—(pursuant to the Federal Clean Water Act)—Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas, and are found primarily within palustrine systems; but may also be within riverine, lacustrine, estuarine, and marine systems.

**wild and scenic river**—A river selected for nomination and/or designation through the Wild-

and Scenic Rivers Act of 1968 for possessing outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values.

**wilderness**—wilderness—A Congressionally-designated area that is part of the National Wilderness Preservation System established through Wilderness Act of 1964; Also defined in the Act as a wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of underdeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

**Wilderness Act of 1964**—Act which gave Congress authority to designate certain areas of public land as wilderness. It established the National Wilderness Preservation System to secure an enduring resource of wilderness.

**wilderness study area**—One of the areas selected by the Chief of the Forest Service from an inventory of undeveloped National Forest System lands as having apparent high qualities for wilderness. Lands possessing the basic characteristics of wilderness and designated by Congress for further wilderness study. A

study can determine whether they should be recommended for addition to the National Wilderness Preservation System.

**wildland fire**—Any non-structural fire on wildlands other than one intentionally set for management purposes. Confined to a predetermined area. Not to be confused with "fire use," which includes prescribed fire.

**wildland urban interface**—The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

**wildlife**—All non-domesticated mammals, birds, reptiles, and amphibians living in a natural environment, including game species and non-game species. Animals, or their progeny (i.e., feral animals—including horses, burros, and hogs), that once were domesticated, but escaped captivity, are not considered wildlife.

**wildlife and fish user-day**—A 12-hour participation in the use of wildlife and fish primarily for consumptive or non-consumptive use including hunting, fishing, or wildlife viewing. Such use is the result of habitat management, and the populations supported by that habitat. A WFUD is counted as one day or any part of a day that the user participated in these activities. Does not include sport or commercial uses of anadromous fish.

**wildlife habitat diversity**—The distribution and abundance of different plant and animal communities and species within a specific area.

**wildlife habitat improvement**—The manipulation or maintenance of vegetation to yield desired results in terms of habitat suitable for designated wildlife species or groups of species.

**wildlife tree**—A den tree, snag, or mast or food tree.

**with-without comparison**—An evaluation that compares outputs, benefits, costs, and other effects with a base alternative.

**withdrawal**—Water removed from the ground or diverted from a surface water source for use.

**withdrawal of land**—An order removing specific land areas from availability for certain uses.

**withdrawn national forest lands**—National Forest System lands segregated or otherwise withheld from settlement, sale, location, or entry under some or all of the general land laws.

**woodland**—A plant community with a structure characterized by trees comprising 25-60% of the canopy cover.

## X

**xeric**—Pertaining to sites or habitats characterized by decidedly dry conditions.

## Y

**yarding**—A term used to describe operations used to move logs from stump to point where logs are loaded for transport to mill. Most commonly used in cable logging operations.

**yield composite**—Activity and output relationships which estimate yields. They allow the development of a yield stream from a related yield stream without entering each yield coefficient independently. Yield composite relationships can be time, age, or sequence based.

**yield stream**—A subset of a yield table containing specific information for an activity or output. A timber output may have a yield stream for amount, diameter, basal area, or trees.

**yield table**—A tabular statement of outputs expected to be produced under a specific set of conditions.

## Z

**zone**—Large, contiguous areas of land that include watersheds or management areas. It can be comprised of several complete analysis units. The land within a zone is generally a heterogenous mixture of environmental types.

**zone management actions**—Management actions available to zones. They contain the ability to coordinate the management activities that occur within a zone.

Exh 1, pt 1

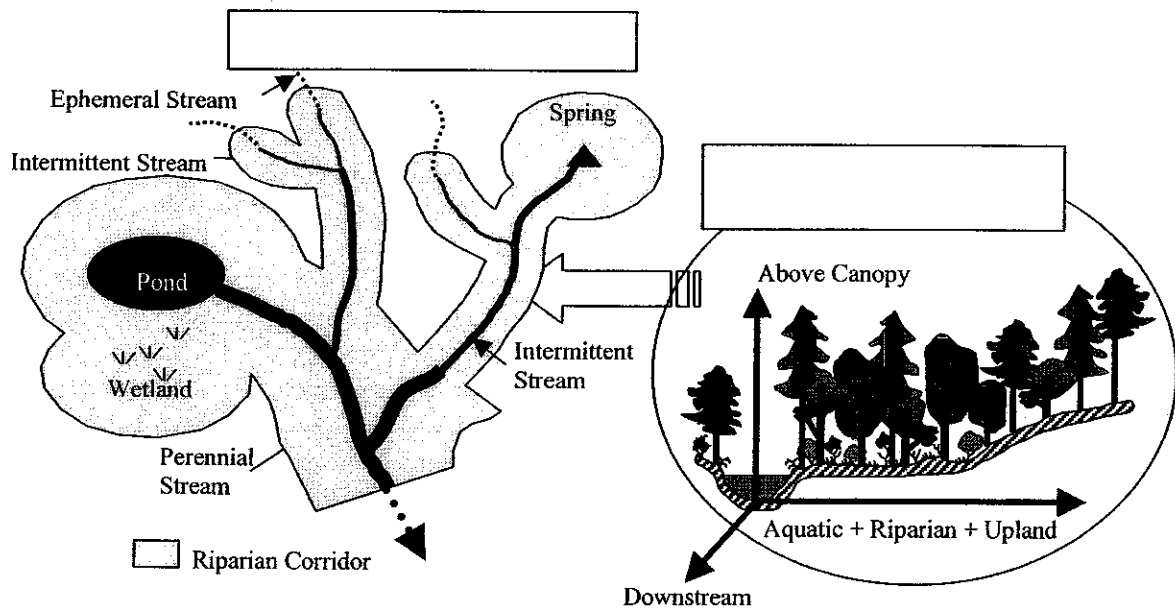
## Appendix C

# Riparian Corridors

### A. Overview of Riparian Corridors

The figure below is a simplified representation of the Riparian Corridor that demonstrates its extension on both sides of a watercourse, down into the water table, and laterally around wetlands and other surface water sources. The Riparian Corridor may fall within or beyond the riparian area.

Figure 1. Simplified Representation of the Riparian Corridor



### Operational Definition for a Riparian Area

Riparian areas are areas associated with the aquatic ecosystem and that portion of the terrestrial ecosystem that is substantially affected by the presence of surface and groundwater. Riparian areas are relatively flat lands with elevated water tables or seasonal flooding that border streams, lakes, ponds, etc. Distinct types of plant species that occur in riparian areas and are common to wetlands. The plant composition is often associated with the magnitude and duration of flooding or soil saturation from rainfall and groundwater interactions, and the types of soils that develop under these circumstances. Riparian areas have variable widths that are determined by

ecologically significant boundaries rather than arbitrary distances. The extent of the riparian area can often be estimated by changes in dominant plant species and topography when interpreting aerial photos. However, their boundaries are best determined on the ground by using features of soil, landform and vegetation, and hydrologic indicators when they are present. No feature is used alone to delineate these ecosystems. Characteristics indicative of these areas include but are not necessarily limited to:

**Soils**- The physical characteristics of soils that are reflected in their taxonomic names often describe soil properties that are suggestive of riparian status. Soils with rainfall exceeding evapotranspiration, flooding, high moisture holding capacity, moisture restriction and/or elevated water tables within the normal rooting zone reveal these characteristics upon field classification. Taxonomic soil names with descriptors such as Fluva (floodprone), Aqua (water) or Ombroaqua (rain and water) are a just few examples.

**Landforms**- The 100-year floodplain, stream terraces (especially the first terrace), and depressional features are typically indicative of riparian conditions.

**Vegetation**- The presence, types and abundance of wetland plants are used to help determine wetland and riparian status. References include Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1, 1987), which includes a National and Southeast Plant list or other available plant lists on this subject such as the US Fish and Wildlife Service National Plant List of Plants that Occur in Wetlands (Reed, 1988).

**Hydrology** - Hydrology indicators are not always present, but can be helpful in determining frequency or likelihood of flooding from adjacent streams, or include observations associated with streamflow, rainfall or groundwater levels for specific determinations.

Although some of the indicators are technically demanding for classification purposes. Many of the soil, landform, plant and hydrology indicators can be applied by trained field crews to assist in the determination if specialists in each field are not on the delineation team.

### **C. Relationship of Riparian Corridors with Streamside Management Zones**

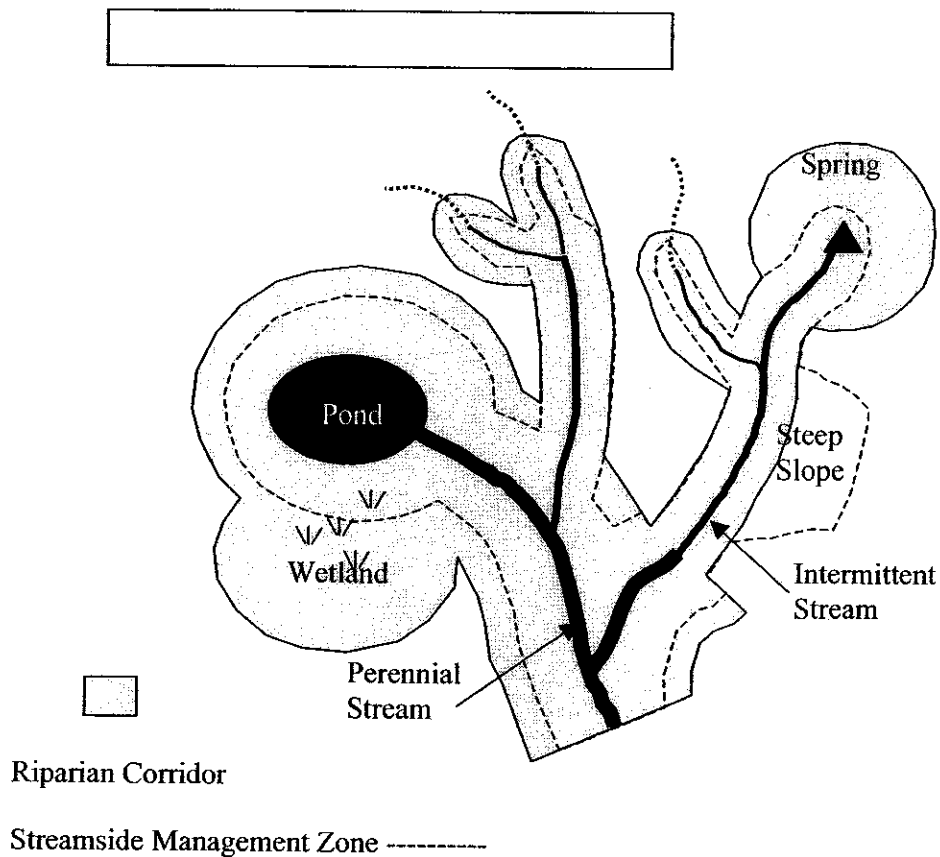
In the implementation of the Sumter National Forest Plans, we will meet or exceed State BMPs to protect water quality. Current State BMP handbooks or manuals are incorporated as direction in the Forest Plan and are implemented for those resource management activities that are covered by the handbooks/manuals. Management direction for activities not included in BMP handbooks/manuals are included in the Forest Plan or this appendix. Where specific direction is lacking for a specific activity, other guidance documents such as the Region 8 Soil and Water Conservation Practices Guide (2002) will be consulted as needed.

The streamside management zones (SMZ) recommended in South Carolina's Best Management Practices for Forestry are designated areas directly adjacent to streams and water bodies where land management activities are controlled or regulated to primarily protect water quality and aquatic organisms from upslope land uses. Provisions within the SMZ typically contain

sediment filter strips, a base shade level, restriction on ground disturbance and protection of stream banks and streambeds. As described, Riparian Corridors are management prescription areas that maintain ecological processes and functions. SMZs may be the same width or smaller than the riparian corridor, however, in some cases they may extend beyond the corridor. (See Figure 2.)

The Sumter Forest Plan may also apply additional standards that are applicable to acres within the SMZ. This is due to the difference in BMP guidelines (which pertain to forestry practices) local geological or physical conditions which require specific SMZ direction (e.g. steep slopes).

Figure 2. The Relationship of the Riparian Corridor to the SMZ



# Appendix D

## Suitability for Timber Production and Timber Sale Program

### Timber Suitability Analysis

During forest land and resource management planning, the Forest Service is required to identify lands unsuited for timber production (36 CFR 219.14). This identification process involves three stages of analysis. Stage 1 analysis identifies lands tentatively suitable for timber production. Stage 2 analysis is designed to explore the financial aspect of varying intensities of timber management on lands identified as tentatively suitable for timber production from Stage 1. Stage 3 analysis identifies lands as unsuited for timber production under the alternative selected in the revised Forest Land and Resource Management Plan.

**Table D-1. Stage 1 Suitability**

Stage 1 Suitability	Acres
<b>Total Sumter NF</b>	<b>362,850</b>
Wilderness	-2,855
Wild/Scenic River	-3,514
Water	-1,761
Non-forest	-5,441
<b>Tentatively Suitable</b>	<b>349,279</b>

The "Stage 2 Suitability Analysis" is an economic analysis of each Analysis Unit (AU) in SPECTRUM. It is meant to answer two questions 1) Which lands are "above cost", and 2) Which management intensity is the most economical for each Analysis Unit. The results

of this analysis can be found in Appendix B of the FEIS.

Table D-2 displays the results of the Stage 3 Analysis:

**Table D-2. Results of Stage 3 Analysis**

Selected Alternative		Acres
Tentatively Suitable		349,279
1B	Recommended Wilderness	-1971
2A3	Recreational River	-977
4D	Botanical Areas	-4,379
4F	Scenic Areas	-9,979
4G1	Calhoun Experimental Forest (Natural Area)	-908
6C	Old Growth	-1620
7A	Scenic Byway	-2,754
7D	Concentrated Recreation Area	-235
7E1	Dispersed Recreation	-6,545
9F	Rare Communities	-622
11	Riparian Corridors	-55,563
12A	Remote Backcountry	-4413
<b>Total Suitable</b>		<b>259,313</b>

All of the acres above are approximate. Management prescription 11 is estimated based on stream order, slope, and soil type. Actual area will be based on ground conditions. Management prescriptions 5A, 5B, and 5C are included in the non-forest acres used to calculate tentatively suitable lands.

## Timber Sale Program.

NFMA regulations (36 CFR 219.16) require that "In a forest plan, the selected forest management alternative includes a sale schedule which provides the allowable sale quantity." The following table shows the allowable sale quantity (ASQ) calculated by the Spectrum linear programming model. For Forest Plan purposes, the following table fulfills the requirement of 36 CFR 219.16. ASQ is an estimated output. It describes the maximum volume of timber that may be harvested from lands suitable for timber production during a specified period, usually ten years. This volume may not be exceeded during a given decade, and is not presented as a guaranteed harvest volume. The actual volume sold depends on budgets, workforce, and site-specific analysis that are beyond the scope of this plan.

Table D-3. Allowable Sale Quantity by Decade	
Decade	Allowable Sale quantity (MMCF)
1	139
2	139
3	139
4	139
5	139
6	139
7	139
8	139
9	139
10	139









# Appendix F

## Possible Outputs and Activities for the First 10 Years (Average Annual)

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Resource		Unit of Measure	Estimate
Prescribed Burning (includes woodland sav.)		Acres	23,527
<b>Harvesting Trees</b>			
	Even-aged regeneration <sup>1</sup>	Acres	2,667
	Uneven-aged harvest	Acres	241
	Thinning	Acres	3,320
	Thinning woodland sav.	Acres	1,470
	Riparian harvest <sup>2</sup>	Acres	300
<b>Site preparation</b>			
	Handfell/Herbicide	Acres	1,144
	Drum Chopping	Acres	1,523
Stand improvement (precom. thin, release, etc.)		Acres	1,904
<b>Roads</b>			
	Constructed	Miles	.9
	Reconstructed	Miles	34.2
	Total	Miles	35.1
	Maintenance	Miles	845
	Road Closure	Miles	6
<b>Maintenance (Construction) Trails</b>			
	Hike only	Miles	72(+0)
	Hike and Mountain Bike only	Miles	109(+8.5)
	Hike and Equestrian only	Miles	21(+0)
	Hike, Mtountain Bike and Equestrian only	Miles	97(+4.0)
	OHV/Motorcycle, Mnt. Bike and Hike	Miles	86(+4.0)
	Paddle sports	Miles	125(+0)
	Portage (for paddle sports)	Miles	2(+0)
	Interpretive (will be on existing trails)	Miles	(+1.0)
	Total	Miles	512(+16.5)
<sup>1</sup> 400 Acres of loblolly pine conversion are included in the acres of even-aged regeneration.			
<sup>2</sup> Riparian area harvest, such as canopy gaps, is not included in other harvest acres shown above. These acres are for riparian dependent species.			

Activity	Unit of Measure	Estimate
<b>Maintaining (Constructing) Developed Recreation Facilities</b>	PAOTS	3107(+0)
<b>Wildlife or Linear Openings</b>		
Constructing/ Fertilization	Acres	164
Maintaining (burning or mowing)	Acres	2200
Maintaining/ Fertilization (cultivating)	Acres	500
<b>Soil and Water Improvements</b>		
Stabilization or Restoration	Acres	150
<b>Improve Soil Productivity</b>		
Fertilization	Acres	700
<b>Water Bird Habitat Development Construction</b>	Acres	60
<b>Invasive plant Control (hand/herb)</b>	Acres	750
<b>Mid-story control</b>	Acres	250
<b>Canebrake Restoration</b>	Acres	200

# Appendix G

## Mining Proposal Evaluation Process

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Under authority of the Mineral Resources on Weeks Law Lands Act of March 4, 1917, (the function of which was transferred from the Secretary of the Agriculture to the Department of the Interior by the President's Reorganization Plan 3 of 1946), prospecting permits and leases may be issued for hard-rock minerals acquired by the United States (FSM 2822.13).

The first step in this process is for the applicant to submit a Prospecting Permit Application to the Bureau of Land Management (BLM). The application must contain the applicant's or the applicant's agent's original signature. The application must also include: (a) applicant's name and address, (b) a statement of the applicant's qualifications and holdings, (c) a complete and accurate land description, (d) three copies of any maps needed to accompany the description; and (e) the name of all of the commodities for which the applicant is applying. Once the application is reviewed by BLM, it is sent to the Forest Service, the surface management agency, for review and consideration. The Forest Service will analyze the applicant's proposal to determine compliance with the Forest Land Use Plan, environmental requirements, and unsuitability criteria. The Forest Service will send out a scooping letter to the public requesting comments on the. The Forest Service will incorporate any comments with the response to BLM giving Forest Service approval to prospecting permit with appropriate mitigation measures to adequately protect surface resources. The Forest Service will publish a Decision Memo that Categorically Excludes the proposal from further analysis. BLM will then approve the prospecting permit for a period of two years and can be extended up to an additional four years.

Once the prospecting comes to a successful conclusion the permittee can apply for a

Preference Right Lease Application (PRLA). In this process the applicant submits the PRLA, data and mining plan to BLM's Eastern State's Office (ESO) in Springfield, Virginia. The PRLA is forwarded to the appropriate Forest Service office. BLM then conducts an analysis on the data from the applicant's exploration and the PRLA. The appropriate Forest Service office reviews the Forest Plan for direction regarding mineral-related uses. Considering this direction, the appropriate Forest Service office conducts an environmental analysis, using procedures in FSM 1950, to evaluate what impact the proposed action would have on the surface resources and other users. The study includes and considers the following factors where applicable:

1. Statutory authorities
2. Existing and planned uses
3. Dedications
4. Impact on surface resources
5. Damage to watershed
6. Degree of surface disturbance and difficulty in restoration.
7. Special values, such as wilderness character, archeological sites, cultural resources (FSM 2361), and endangered species habitat
8. Access needs, including system roads to be used, reconstructed or constructed
9. Term of the lease and probable nature of operations
10. Economic considerations, such as relative values of minerals and surface resources and scarcity of and demand for minerals
11. Range of alternatives for operations and land used and for environmental protection.

During this process BLM cooperates with the Forest Service on the environmental analysis and makes a valuable deposit determination based on the information provided by the potential lessee.

The next step is for the Forest Service to make their consent decision and send the lease stipulations and plan of operations mitigation measures to BLM.

BLM then finishes the preparation of their environmental analysis with lease stipulations and calculates the bond.

Both BLM and Forest Service conduct a final review and BLM requests the bond and requires the Lessee to agree to the lease stipulations and plan of operation mitigation measures.

BLM then issues the lease.

The lessee cannot commence operations until they have complied with all State and local requirements.

# Appendix H

## Vegetation Management Practices

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This appendix describes the most common vegetation management practices that are likely to be chosen as individual projects are designed and implemented on the Sumter, as well as the forest types where one could expect them to be used. This information complies with CFR 219.15. Standards and guidelines that apply to these practices are found in chapters 2 and 3 of the Forest Plan.

Site-specific treatment choices are made at the project level, and are not constrained by this Forest Plan appendix. The combinations of forest types, stand structures, component species, site characteristics, and other conditions that could exist throughout the forest are extremely variable.

### Silvicultural Systems and Associated Harvest Methods

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There are three silvicultural systems used to provide regulated and sustainable yield of wood products for local wood processing facilities on the Sumter National Forest.

1. The *even-aged silvicultural system* is a planned sequence of treatments for tending, harvesting and re-establishing a stand designed to maintain trees composed of a single age class in which the range of tree ages is usually 20 percent of rotation. This system creates a mosaic of single age class stands across the lands suitable for timber production. Collectively, all age classes are present and maintained on lands that are suitable for timber production. When a stand reaches the appropriate age, often expressed as the rotation, a final harvest is scheduled to remove most or all of the merchantable trees in a stand. Whether all or some of the merchantable trees are harvested depends

on the regeneration method chosen to accomplish the management prescription objectives. Regeneration, designed to replace desired tree species, takes place within 5 years after the final harvest.

#### *Even-aged regeneration harvest methods:*

- a. Seed tree method—All trees are harvested except for a small number of trees retained for seed production. This method is designed to produce a new stand in fully exposed microenvironment. Seed trees are usually removed after regeneration is established. In most cases, snags and any existing den trees are left for wildlife habitat.
- b. Shelterwood method—Enough trees are left to produce sufficient shade to produce a new age class in a moderated microenvironment. The sequence of treatments can include three types of cuttings:
  - (1) an optional preparatory cut to enhance conditions for seed production,
  - (2) an establishment cut to prepare the seed bed and to create a new age class, and
  - (3) a removal cut to release established regeneration from competition with the overwood. Cutting may be done uniformly throughout the stand (uniform

shelterwood), in groups or patches (group shelterwood), or in strips (strip shelterwood). In most cases, snags and any existing den trees are left for wildlife habitat.

- c. Clearcutting method—Essentially all merchantable trees are harvested, leaving a fully exposed microclimate for the development of a new stand. In most cases, snags and any existing den trees are left for wildlife habitat.

*Intermediate harvests* are made in even-aged and two-aged stands between regeneration and maturity. These may include:

- a. Thinning—A harvest made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality.
- b. Improvement cuttings—The removal of less desirable trees of any species in a stand of poles or larger trees, primarily to improve composition and quality.
- c. Sanitation cuttings—The removal of trees to improve stand health by stopping or reducing the actual or anticipated spread of insects and disease. (See stand improvement.)
- d. Salvage cuttings—The removal of dead trees or trees damaged or dying because of injurious agents other than competition, to recover economic value that would otherwise be lost.

- 2. The two-aged silvicultural system regenerates and maintains stands with two age classes.

*Two-aged regeneration harvest methods:*

- a. Clearcutting with reserves—A clearcutting in which varying numbers of reserve trees are not harvested to attain goals other than regeneration.
- b. Seed tree with reserves—Some or all of the seed trees are retained after regeneration has become established to attain goals other than regeneration.
- c. Shelterwood with reserves—Some or all of the shelter trees are retained after regeneration has become established to attain goals other than regeneration.

- 3. The uneven-aged silvicultural system is a planned sequence of treatments for tending, harvesting and re-establishing a stand and maintaining trees in three or more age classes.

*Uneven-aged regeneration harvest methods:*

- a. Single tree selection—Individual trees of several size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and to provide space for regeneration.
- b. Group selection—Trees are removed and new age classes are established in small groups. The width of groups is commonly no more than twice the height of the mature trees with smaller openings providing microenvironments suitable for shade tolerant regeneration and larger openings providing conditions suitable for shade

intolerant regeneration. Thinning may also be done between groups as part of the harvest.

Coppice methods, which achieve the majority of regeneration from stump sprouts or root suckers, are not addressed here since strict coppice methods have not historically been in substantial use on the Sumter. However, stump sprouts are an important component of regeneration for most hardwood types and can be important for shortleaf pine and pitch pine under certain conditions. Advance regeneration of seedlings is also very important in many hardwood types, and can play a role in the regeneration of conifer types as well.

## **Application of Silvicultural Systems and Harvest Methods**

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Because most of the desired forest types are composed of tree species that range from shade intolerant to intermediate in shade tolerance, even-aged and two-aged silvicultural systems will probably be applied in most places. As stated above, group selection can be adapted for shade intolerant species also. While single tree selection has been used with success in loblolly pine—shortleaf pine forests, it does present some challenges discussed later in this appendix.

Seed tree and shelterwood harvests are the regeneration harvest methods that will probably be most commonly applied across the forest. These systems can meet most visual quality needs.

Clearcutting or clearcutting with reserves will most likely be applied where a forest type conversion is desired, and the seed source for an existing species, such as loblolly pine or Virginia pine, needs to be removed.

Two aged systems will probably be applied in areas of high visual sensitivity such as near trails. How many reserve trees must be left before a stand is considered two-aged can be a fine distinction. Oak, hickory and den trees will typically be kept as reserve trees in most

regeneration harvests.

Uneven-aged systems are most likely to be used in areas of high visual sensitivity. Their use presents some challenges to consider.

1. Harvest equipment. Most harvesters are designed for either large or small material, but not both. Saw head harvesters can also present problems with the saw head mowing down sapling size trees that comprise the youngest age classes.

2. Economics.

- a. Relatively low volumes per acre increase purchasers' costs. This decreases revenue from such sales and makes them less attractive to purchasers. Because of this one cost factor, stands in which uneven-aged regeneration harvest is planned should generally have the following characteristics:

- (1) Slopes operable by ground skidding equipment (reason—permit more cost effective ground based tree felling and skidding operation).

- (2) Close proximity to existing system roads (reason—minimize purchaser's need to build roads for log removal).

- (3) Substantial stand size. Larger than 60 acres is best (reason—so the sale of the wood products will have sufficient total volume to permit the purchaser to make a profit).

- b. Mixed product sizes. Harvest through all diameter classes (in single tree selection) results in

separate products for purchasers to market. Markets for smaller trees are weak in parts of the Sumter. Individual purchasers usually supply either large tree markets or small tree markets.

- c. Time and cost of intensive inventories. Detailed stand inventories are needed to apply the single tree selection method. Additional time and cost are substantial. With limited personnel and budget, these are important factors.
  - d. Hardwood control in pine stands. With an uneven-aged structure, shortleaf pine and loblolly pine stands can only carry a limited hardwood component and still have enough sunlight to produce successful regeneration. This can require hardwood control most cutting cycles, perhaps every cutting cycle.
  - e. More frequent entries increase the cost for marking and sale administration.
- 3. Shade tolerance of desired forest types. As already stated, most of the desired forest types on the Sumter National Forest are composed of tree species that are shade intolerant to intermediate in shade tolerance. These species are better adapted to even-aged or two-aged silvicultural systems.
  - 4. Stand tending in group selection. Tracking groups runs counter to the philosophy behind group selection, and turns it into even-aged management on a micro scale. It also presents difficulties with service contracts for site preparation, release, or other activities.

Therefore, one hopes that stand tending treatments will not be necessary, and accepts the species composition and yields of untended groups.

Thinning is likely to be applied in most forest types. It is usually visually benign, and can often improve visual quality. One specific application of thinning will be applied that has not been in previous use on the Sumter. This is in the development of woodland conditions. The purpose of such a thinning is to create very open forests with low tree densities. These will be associated with the use of prescribed fire to create and maintain herbaceous understories. Woodland conditions will be sought most often in management prescription 8B2, but also in management prescriptions 7E2, 8A1, and 9G2 and perhaps others.

Salvage harvest will probably be most associated with southern pine beetle outbreaks. This may occur in any place where there is host type, and the management prescription does not prohibit salvage harvest. Salvage is also common after wind events. It may also be applied after severe ice storms or other events that cause enough mortality or damage to warrant salvage harvest.

## **Silviculture by Forest Type**

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Silviculture is discussed by forest type instead of community types because species composition varies more widely by community type than by forest type. This species composition defines the regeneration requirements that are needed.

### **Silviculture in loblolly pine forest types—**

Loblolly pine is the most extensive forest type on the Sumter National Forest. In the piedmont, the most likely regeneration method is the seed tree method, especially in management prescription 10B. Anticipated site preparation for these sites is mechanical drum chopping. In areas of very high visual concern, either shelterwood or shelterwood with reserves may be used. Herbicide foliar sprays may commonly

be used to release loblolly pine, oak, and hickory seedlings. Precommercial thinning will be needed in some stands that become very densely stocked with seedlings.

Oak and hickory canopy trees will commonly be retained, as will wildlife den trees.

In most piedmont management prescriptions, thinning will be used to maintain moderate stand densities (less than 100 square feet per acre basal area) to reduce susceptibility to southern pine beetle attack and to encourage development of larger diameter trees.

In the piedmont 8B2 management prescription, heavy thinning will be applied to many stands to achieve very open woodland conditions. Such thinning and associated practices were discussed above.

In the 9G2 management prescription, hardwood and mixed pine and hardwood stands are desired. If advance oak and hickory regeneration is present, clearcutting or clearcutting with reserves may be used to release this advanced regeneration and limit the seed source for future/additional loblolly pine seedlings. Most stands, however, are not expected to have adequate advance oak and hickory regeneration. If it is not present, thinning may be used to achieve stand densities that provide enough sunlight to encourage these species in the understory.

In the mountains, loblolly pine is outside its native range. These stands will be replaced with shortleaf pine, pitch pine, oak, hickory, permanent openings, or some combination of these. Clearcutting or clearcutting with reserves may be the most common method used to remove all of the loblolly pine. If desired species are already present as a component of the current stands, they will remain.

**Silviculture in shortleaf pine and pitch pine forest types**—In the mountains, even-aged and two-aged silvicultural systems are most suitable to regenerate shortleaf pine and pitch pine forest types. This is because both of these species are intolerant of shade. Anticipated site preparation methods are felling of unwanted residual trees

and/or herbicide application to seedling through pole size tree species other than shortleaf pine, pitch pine, oak or hickory. Since seed crops are irregular, and not dependable for any given year, planting may be needed, or site preparation may need to be repeated. Otherwise, regeneration harvest could convert such sites to hardwood types. These species may often be managed together with oak and hickory species as mixed forest types. After establishment, release with herbicide may be a common practice. Thinning may be used to maintain moderate stand densities of less than 100 square feet per acre basal area. This will reduce susceptibility to southern pine beetle attack and encourage development of larger diameter trees.

In the mountains, shortleaf pine/pitch pine types are appropriate forest types to establish woodland conditions, as described previously.

In the piedmont, shortleaf pine is desired on sites where it is not likely to be affected by littleleaf disease. On some sites, loblolly pine stands may be converted to shortleaf pine, or possibly a mixture of shortleaf pine with oak and/or hickory. Such sites must be carefully selected. Soils on these sites must be well drained. Otherwise littleleaf disease is likely to take a severe toll on the species. Clay soils, including typical red clay eroded soils, are not appropriate sites for establishing shortleaf pine in the piedmont. On piedmont sites being converted from loblolly pine forest types, clearcutting or clearcutting with reserves will probably be used to remove all of the loblolly pine in a stand and limit that seed source.

#### **Silviculture in Virginia pine forest types**—

Virginia pine is a common species in the southern Appalachians. It usually occupies sites that are well suited to shortleaf pine and pitch pine, two species that are much less abundant in southern Appalachian forests than in years past. Therefore, Virginia pine stands of merchantable size may commonly be targeted for conversion to shortleaf pine and/or pitch pine, retaining oak or hickory that may be present. In these stands a sequence of treatments will be needed to ensure

Virginia pine seedlings have been eliminated, because it tends to regenerate prolifically. This sequence would typically be to: (1) harvest the Virginia pine, (2) fell unwanted residual trees, and then (3) spray all Virginia pine seedlings with herbicide, as well as seedlings/sprouts of any other undesired tree species. Uneven-aged methods would discriminate well against Virginia pine, but they are not the best suited methods for the species that are desired to replace Virginia pine: typically shortleaf pine, pitch pine, oak or hickory.

Where Virginia pine is desired in the regenerated stand, clearcutting or clearcutting with reserves are the best methods because Virginia pine is a shallow rooted species subject to wind throw. It produces seed almost every year and is intolerant of shade. Other even-aged or two-aged methods would work, but the remaining Virginia pine canopy trees would have a substantial probability of being blown over.

For the same reasons, any thinning done in Virginia pine should not open such stands too much, or wind throw could likely result.

#### **Silviculture in oak-hickory forest types—**

Advance regeneration is the key to regenerating oak and hickory forest types. This makes categorizing regeneration methods for these types difficult. Even-aged and two-aged methods are the most appropriate however, because oaks and hickories are generally intermediate in shade tolerance and do not reproduce well in their own shade. Herbicide release may be needed to favor oak and hickory seedlings over less desired competing tree species.

Thinning can be important in these stands for two reasons. First, oak and hickory trees need large, well-developed crowns to produce substantial quantities of hard mast. Individual trees must have adequate space to develop such crowns. Second, dense stands do not allow enough sunlight to the forest floor to encourage the establishment of advance regeneration.

#### **Silviculture in eastern white pine forest**

**types—**Silviculture in these forest types depends on whether eastern white pine is desired in regenerated stands or not. Where it is not, best results will be obtained by harvest of all eastern white pine in a given stand to limit the available source of seed.

Where white pine is desired in a regenerated stand, almost any regeneration method can be made to work. This is because white pine is shade tolerant and thus suited to uneven-aged methods, but also fast growing enough that even-aged systems tend to work well.

#### **Silviculture in yellow-poplar forest types—**

On the Sumter National Forest, yellow-poplar is most often found growing together with other species. Its seed can remain viable in the forest floor for 4-7 years. This stored seed and yellow-poplar's very fast growth habit make even-aged and two-aged regeneration methods most appropriate for use where this species is desired. Because of the seed stored in the forest floor, no overstory trees are needed for regeneration. They may be retained for aesthetic reasons, however, for habitat needs, or to continue growing if they are still relatively young. Where other species are desired in the regenerated stand, yellow-poplar must be treated (most effectively with herbicide) if other species are to have much chance of competing. Yellow-poplar is so aggressive and fast growing that even though it is classified as shade intolerant, it can sometimes become established in relatively small canopy gaps.

#### **Silviculture in bottomland hardwood forest types—**

Most of these areas fall into the management prescription 11, riparian corridors. Anticipated harvest in this forest type is mainly to produce canopy gaps or to restore canebrakes.

Harvests to provide canopy gaps will most likely be either group selection or thinning. These are expected to be adjacent to and concurrent with other harvests in upland stands so that they can be commercially feasible.

These harvests should favor retention of mast producing species.

With canebrakes, the preferred harvest is generally a sequence of thinnings until approximately 20 square feet per acre or less basal area remains. Prescribed fire is needed approximately once every 10 years.

**Silviculture in eastern hemlock forest types**—Harvest operations are not anticipated because of the threat to this species from hemlock woolly adelgid, and because much of this forest type is in riparian areas.

### **Site Preparation, Reforestation, and Stand Improvement Methods**

All site preparation methods are available for use on the Forest. These include, but may not be limited to mechanical methods, prescribed fire, manual methods and herbicide use. Many of these have been discussed under the previous section of this appendix. Limitations on these methods are found in standards in chapters 2 and 3 in this Forest Plan.

Planting is anticipated mainly in:

1. Areas being converted from loblolly pine to shortleaf pine and/or pitch pine
2. Regeneration of shortleaf pine, pitch pine, or table mountain pine stands in the mountains.
3. Areas being converted from Virginia pine to shortleaf pine or pitch pine.
4. Salvage areas of sufficient size (larger than 5 or 10 acres) that natural regeneration may not be sufficient.
5. Gullied areas that are being restored to reduce erosion and sedimentation.

The primary methods of stand improvement are expected to be release, precommercial thinning, and fertilization. Release is a treatment designed to free young trees from undesirable, usually overtopping, competing vegetation. Precommercial thinning is the removal of trees not for immediate financial return, but to reduce stocking to concentrate growth on the more desirable trees.

Release and precommercial thinning have been addressed in the previous section, and may be applied in circumstances not already mentioned. Selective application of herbicides will probably be the method used to accomplish most release work. This activity is most useful in shaping the species composition of individual stands. Fertilization for stand improvement is principally done in loblolly pine stands after a first thinning. Soil fertility is a key ecosystem component that was much reduced on many eroded piedmont farm lands before they became National Forest lands.

### **Other Vegetation Management Practices**

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Prescribed fire is used to reduce hazardous fuel accumulations and to manipulate vegetative communities. Many plant species on the forest are fire adapted to some degree. Some are perhaps fire dependent.

Herbicides will be the primary means of controlling non-native invasive plants. There are a wide variety of these plants in a wide variety of places across the forest. In some circumstances pulling can be effective, but in most cases it is important to kill all of the root tissue of these species.

The vegetation in wildlife openings will be maintained by a number of methods. These may include prescribed fire, mowing, disking, herbicide application, chain saw use or tree grinding.

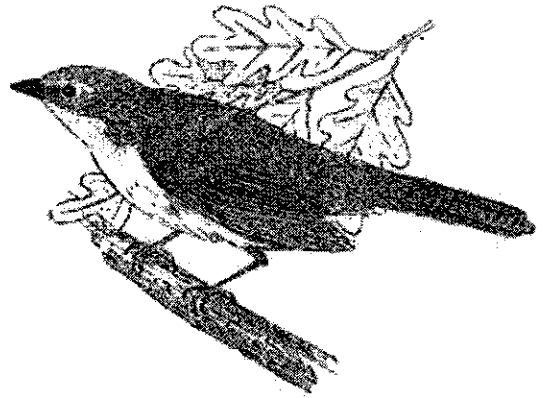
In regeneration areas, snags (dead trees) are sometimes lacking. These are sometimes created by either cut surface application of herbicide, or by girdling.

Fertilization will be used in conjunction with seeding done for erosion control and wildlife habitat enhancement. It may also be used for soil/water improvement to increase the growth of understory plants, reducing runoff and erosion.

Utility companies must maintain their rights-of-way across National Forest lands so that trees do not interfere with their management. This is generally accomplished either by herbicide application, or by mowing.

Dams and dikes need to be kept relatively free of trees and other woody vegetation. That is because their roots weaken the structures, and create pore spaces through which water can begin to move through the dam or dike. This vegetation control is accomplished most effectively with herbicide application.

Ponds and lakes sometimes develop populations of aquatic weeds that need control. Such control is accomplished by herbicide application.



*Mesic deciduous forest on the piedmont.*

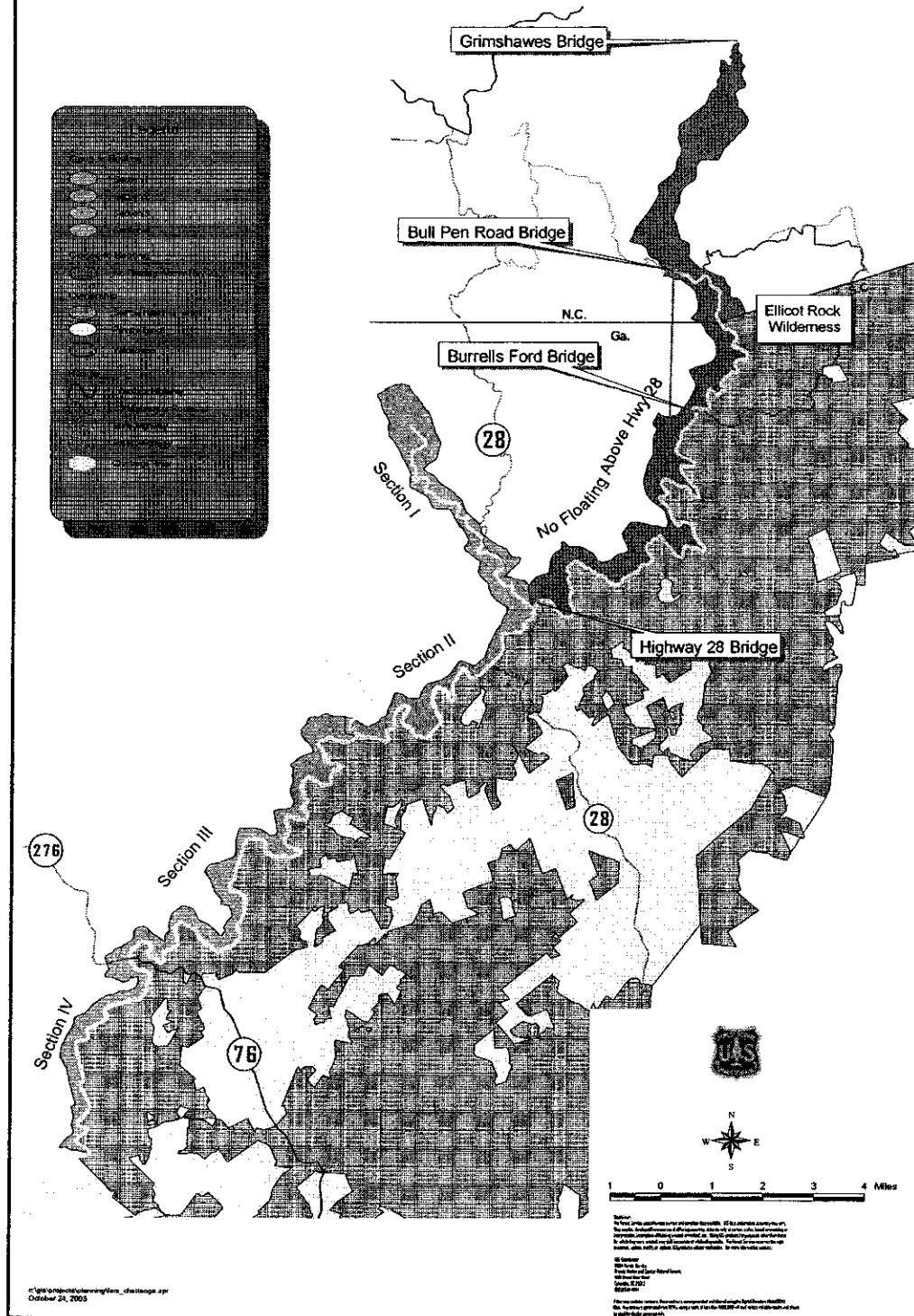
# Appendix I

## Resource Maps

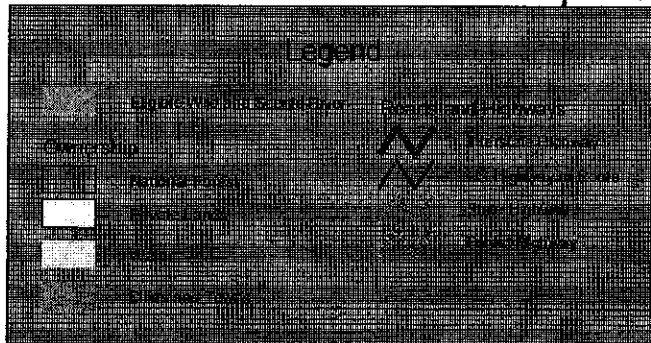
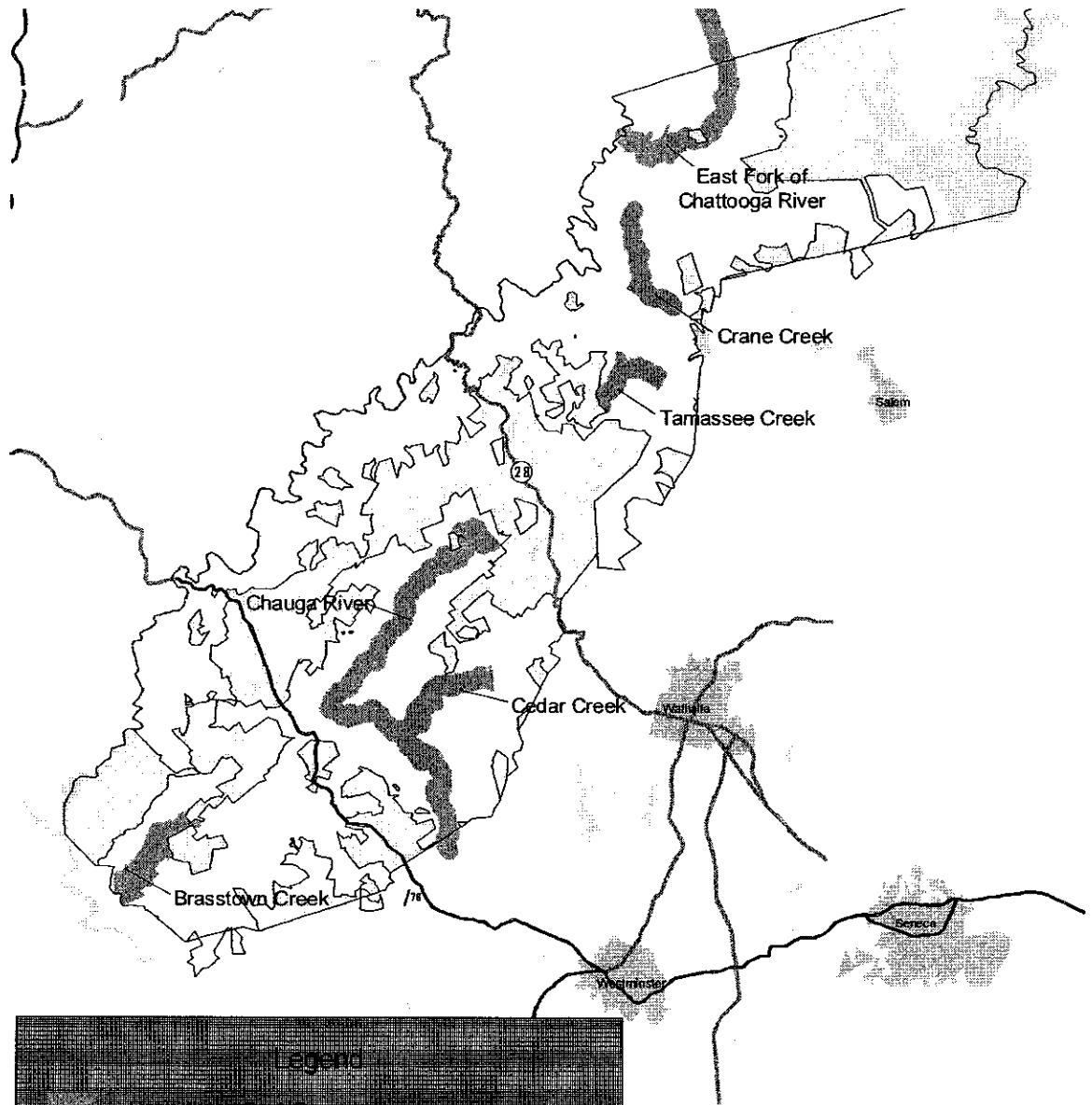
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The portions of the Chattooga River open to boating are divided into four sections. (Please refer to the following map.) Section I is the West Fork of the Chattooga River in Georgia ending at the main river channel. Section II begins at the Highway 28 Bridge and ends at Earl's Ford. Section III begins at Earl's Ford and ends at the Highway 76 Bridge. Section IV begins at the Highway 76 Bridge and ends at Lake Tugaloo. The uses of the river are regulated by section, season, water level and type of use (commercial and private). These are further discussed as standards within management prescription 2A in Chapter 3.

# Chattooga Wild and Scenic River Corridor



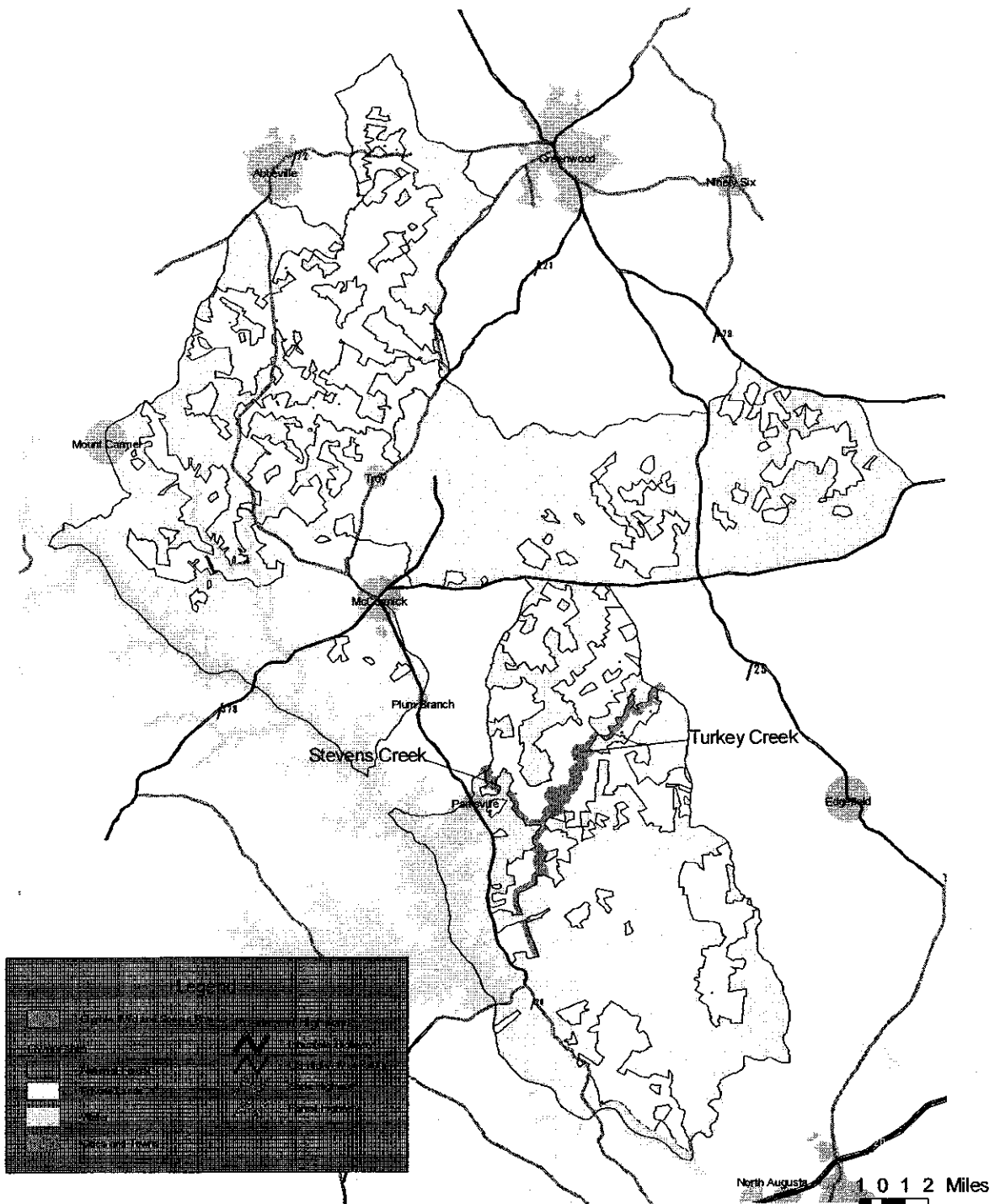
Eligible Wild and Scenic Rivers  
on the  
Andrew Pickens Ranger District  
Sumter National Forest



October 22, 2003

1 0 1 2 Miles

Eligible Wild and Scenic Rivers  
on the  
Long Cane Ranger District  
Sumter National Forest



October 22, 2003

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